The Builder.

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THE superintending inspectors under the Public Health Act, are making their reports to the general board, on the preliminary inquiries instituted in various towns; and a few of these, namely, the reports on Whitehaven, Fareham, Ware and Amwell, Uxbridge, and Croydon, are now before us. A large section of our readers look to know something of the result of these inquiries, and, although we cannot pretend to put before them any complete view of the matter, we will endeavour to satisfy them to a certain extent. The reports are printed in an octavo form,* and consist of from twenty to forty pages each. They one and all give a miserable picture of the existing state of things, and show "that the application of the Public Health Act is not only imperatively necessary, but will be of the greatest advantage, morally, physically, and pecuniarily, as the benefits will be reaped alike by rich and poor. The labourer will be relieved from much preventible sickness, poverty, and despair; the health of all classes will be improved, and the present oppressive rates reduced."

To the statement, as to the pecuniary advantages,—"that the requisite measures may be carried out at a positive saving to the inhabitants,"—the said inhabitants do not all seem disposed to give credence, whatever may be their opinion of the report in other respects. Of this, however, hereafter.

Looking to one of the fullest of the reports (that on Whitehaven), we find the inspector (Mr. Rawlinson) saying, that in every town he has visited, "few beside the medical gentlemen know any thing of the utter wretchedness and misery produced by a want of proper sanitary regulations;" that this particular town has a great excess of disease distinctly traceable to preventible causes; and that the health of the inhabitants may be improved, and the poor-rates reduced by, "first, a full and constant supply of pure water laid on in every house and in every room-tenement. Secondly, by a system of sewers laid down in the town, and of drains properly arranged and taken into every house, back street, court, yard, and alley. Thirdly, by the general adoption and use of water-closets or soil-pan apparatus, fitted up with proper tubular drains to convey away the refuse from each, and by the removal of all liquid refuse in similar drains laid at such a depth as shall insure, by means of the same excavation, the perfect drainage of the foundations of all dwelling-houses. Fourthly, by opening out blind courts and alleys, by removing all open middens in confined places, and forbidding their accumulation, by closing all objectionable cellar and room-tenements, by improved paving of all yards, courts, and alleys, and by a regular system of surface cleansing with water."

He further recommends that a cemetery should be provided, the existing burial grounds being amidst houses, and unduly crowded; that the place should be better lighted, and that the refuse of the town, by being applied to agricultural purposes, might be made to lessen the rates, and produce a fund for improving the place. There is a public school here, the yard and convenience of which are in an indescribable state; "the children have to pick their way in and out of it as best they can." The inspector found it difficult to choose his way in broad day-light!

A pretty place in which "to rear the tender mind, and teach the young idea how to shoot,"—to induce careful habits and love of order! The effect of external circumstances in the formation of character is ignorantly overlooked by all classes of society. What is attributed to disposition (and the Inevitable) in after days, and affects not merely the well-being and happiness of the individual through life, but of society generally, is oftener the result of the circumstances under which he was placed, and might, without difficulty, have been changed or regulated.

In Whitehaven the habitations of the labouring classes are most injuriously crowded together, and unfit cellars are used as dwellings to a great extent. A report made to the local Board of Health there says properly:—

"Your committee cannot condemn in terms too strong the habitation of cellars, which exists in many parts of the town to a great extent. Nothing can be more injurious to the health of a labouring community than being obliged to occupy abodes of such a nature. Deprived alike of the cheering and invigorating influence of light and fresh air, it is in these dens of misery and wretchedness that disease, particularly of an infectious nature, seizes upon its unresisting and helpless victims. From these, fresh sources of infection spring up, and a neighbourhood that might otherwise be healthy is rendered the reverse of this, from the habitation of cellars being permitted to exist."

And not merely is it rendered less healthy bodily, but less happy, less good. A moral infection spreads, even more disastrous in its results!

The cost of such districts to the community is placed beyond cavil. "Bad sanitary regulations, excessive sickness and mortality, with burdensome and oppressive poors'-rates, must ever be associated. They are cause and effect."

A statement as to the gas-lighting of the town bears out the truth of our often repeated assertion (so often repeated that the echo of it is now to be heard in all quarters), that with reduced prices comes increase of consumption, and advantage as well to the shareholder as the public. The price charged for gas here, when the works were first established, was 12s. 6d. per 1,000 cubic feet. This was reduced, the chairman of the company said, "as the consumption increased, to 10s., 8s., and, in 1847, to 4s. per 1,000 feet. Since the last reduction, a very considerable increase has taken place in the consumption, and ground has been purchased to increase the works, which will be commenced immediately. Generally speaking, we divide an annual dividend of 10 per cent. But after the price was reduced to 4s. per 1,000 feet we did not divide so much. The first year was only 5 per cent., but for the last half-year we did divide 10 per cent."

"The gradual reduction in price detailed by the chairman," says the Inspector, "is a strong incentive to comprehensive and liberal measures, as the increased consumption consequent upon a reduction of 4s. from 8s., in the space of one year, raises the per centage up to the same rank, namely, 10 per cent., and there is no proof that this is the final limit of reduction."

Existing evils are said to be frightful, and the inspector remarks that those who have hitherto had the management of the town affairs must have thoroughly neglected the condition of the inhabitants, or such an amount of human misery and degradation as is there found could not have been accumulated.

Will succeeding trustees commit the crime which a continuance in such a course, now that the evils of it are known, unquestionably involves?

The report on Fareham, by the same inspector, shows, amongst other things—

"1. That the town of Fareham is not so healthy as from its pleasant and open position it ought to be. That, in a great measure, this arises from the want of proper sewers and drains. That the stagnant ditches and open dung-heaps render the inhabitants liable to any epidemic disease whenever such unfortunately prevails.

2. That, according to the medical testimony, excess of disease and fever may be distinctly traced to this want of drainage, and to an imperfect and impure water supply; and that a low state of morality is ever attendant upon bad or imperfect sanitary regulations, as stated by the vicar.

3. That many grievous public and private nuisances exist, such as open and stagnant ditches, privies, and pigsties, in contact with dwelling-houses, exposed middens near open and shallow wells of water, and cesspools in confined yards and houses.

4. That the present churchyard burial-ground should be closed, and another cemetery provided."

It maintains that the health of the inhabitants would be improved and their moral condition raised, by a perfect system of drainage, a constant and cheap supply of pure water, the use of soil-pan apparatus, improved roads properly cleansed, and the application of the Public Health Act to the town.

The inhabitants, however, or a section of them, decided, at a public meeting held two or three days ago, against the introduction of the Act. The vicar of Fareham, the Rev. Wyndham Madden, and an intelligent minority, sought to prevent a hasty decision, but the resolution was nevertheless carried.

In the report on Ware,* the inspector, Mr. W. Ranger, dwells on the importance of ventilation in preventing disease, and mentions the following illustrative facts which occurred at Aylesbury:—

"Soon after the formation of the union in 1835 and 1836, the parish workhouse, which then stood in a meadow, was purchased by the guardians of the union: the building itself underwent much alteration and considerable enlargement, so that the space around, which before was free and open, became occupied by new buildings, outhouses, &c., and a high boundary wall was erected. In these premises the inmates of the union-house year after year were severely and fatally affected with gastric fever, diarrhœa, and dysentery; this state of things led to various measures, and all that were practicable were in succession adopted, but without effect, so that it became necessary to decide on abandoning the building as unfit for the purposes of the union (after having expended a considerable sum on the additions, &c.), solely from its insalubrity. A new union-house has since been erected on an open elevated situation; and in this building, which has been occupied since 1844, dysentery has never arisen, and the autumnal gastric and intestinal affections are far milder and infinitely more rare than in any other part of the district, though no alteration of the diet of the inmates has been made. The union-house hospital is made the receptacle of most of the chronic and protracted cases for different parts of the union, and in the winter months nearly all the beds are often thus occupied. The new union-house is thus made subservient to

* "By W. Clowes and Sons, Stamford-street, for her Majesty's Stationery-office."

* We referred some time ago to the efforts of the vicar, the Rev. J. W. Blakesley, and the parish authorities, in promoting a sanitary inquiry here.

the interests of the union, and the hospital a benefit to the sick poor instead of being the hot-bed of disease, which the old union-house most assuredly was. That building being sold, it was partly pulled down and converted into distinct dwellings, and other detached houses have been erected on the same site: by clearing some of the ground and attention to drainage (although the latter is very imperfect), and by rendering the place more open, it has been restored to an equal degree of salubrity with the rest of the vicinity. Exemplifications of similar causes of disease (*i.e.* want of adequate ventilation) abound in Ware, particularly Cage-yard, Blue Coat-yard, and the courts of Amwell-end."

The inspector comes to the conclusion that "a very large amount of excessive sickness, and the great excess of premature mortality, and the expense contingent thereon, may be materially alleviated by the application of the provisions of the Health Act to the township of Ware and that portion of Great Amwell immediately adjoining." He recommends that powers be taken for carrying out the following measures:—

"First—For an abundant supply of pure water upon the constant system, filtered and carried into every tenement, for domestic use, for cleansing, and household purposes, the cost of which, I am of opinion (judging from the cost of existing water-works), will not exceed the amount of 1d. per house per week.

Second—For converting existing privies into water-closets, and, in the numerous instances where neither privies nor water-closets exist, for erecting water-closets, which have been estimated at the cost of 3*l.* per closet, or 4s. per annum.

Third—That powers be taken for systematically draining, by means of tubular or other efficient drains, houses, courts, areas, and roads.

Fourth—That powers be taken for daily cleansing the carriage and foot ways, so as to prevent the accumulation of mud and filth.

Fifth—That powers be taken to render the manure of the town productive, which, I am of opinion, may be done in a way alike beneficial and profitable to all parties—the farmers as well as the inhabitants—when the necessary arrangements are made for its distribution.

Sixth—That all blind alleys, where practicable, be converted into thoroughfares, in order that the noxious vapours may be dissipated by currents of air, or diluted by access to large open spaces. In furtherance thereof I am of opinion that all dead walls should be taken down or made as low as possible, and open fencing substituted.

Seventh.—That powers be taken for insuring a complete system of ventilation of the several rooms of tenements and parochial and other schools for the children of the poor, and also for preventing overcrowding by regulating the number of persons sleeping in rooms, according to their sizes."

In the report on Croydon, also by Mr. Ranger, the writer urges, as he does in others, that benefits would be derived by the ratepayers from general contracts for the erection and repair of drainage and water apparatus.

"Under ordinary circumstances, when accidents happen within or without a building, the tenant has to consider in what manner the repair is to be done, and, not unfrequently, how he is to pay for it: but the first question is, who is to be sent for? The men when they arrive make the repair in their own way, and regardless of any system. In a majority of cases where the plumber is sent for, more than one-half of the time is absorbed in journeys. It is suggested that much of the loss arising from the journeys, &c., would be saved, and the inconvenience much more speedily remedied, if general contracts for the repairs were adopted.

There can be no doubt of the fact that by general contracts the rate-payers would derive a very considerable benefit. By the present mode separate plumbers are employed, each doing the work in his own way; by the plan of general contracts a considerable saving of capital would be made, and the work done on principle, in a superior manner, and at a much less cost. If the apparatus for each house require an expenditure, say of 5*l.* from the owner, then, instead of enforcing an immediate outlay from him to that amount, or of obliging him to send for a plumber and bricklayer, the whole might be commuted for an improvement-rate, say 1d. or 2d. a-week, payable half-yearly by the tenant."

It appears that there are in Croydon forty-five public-houses and thirty-three beer-shops. "Taking the receipts at 6*l.* per week on the average for public-houses, and 2*l.* per week at the beer-houses, the total annual expenditure of the parish at such houses will amount to 17,272*l.*"

This is a suggestive sentence. Let some of our readers think over it.

It will not be difficult for those who are blindly opposed to the movement to cavil at parts of these reports, but that is not our *rôle*: we would by every means in our power help it forward, and aid in leading to the adoption of measures calculated to lessen suffering, and lengthen life; to save money, and elevate the moral character of the community.

ON THE HISTORY OF THE POINTED ARCH.

IN attempting to trace the history of the pointed arch, it is not my intention to enter upon the various theories which have been proposed to account for its invention: it would be irrelevant to my present purpose to discuss whether it arose from the intersection of two round arches, as proposed by Dr. Milner, or whether it was suggested by the intertwining branches of a grove of trees, as proposed by others, even if it could be shown that it arose from any such circumstance, which I do not myself believe it can. As the question was very distinctly stated by Dr. Whewell, in his notes on German Churches,—"These only tend to show how the form itself, as an arch, may have been suggested, not how the use of it must have become universal." It appears to me that the discussion of such questions can lead to no really practical result, and, on the contrary, tends to do harm,—as, while men are discussing purely theoretical points, their attention is diverted from the real facts of the case. The tendency to theorise instead of observing, seems to have been the first great mistake committed in treating this question; but a second has been, confining the question to the eleventh or twelfth centuries, and discussing only whether it was then invented by the French, English, or Germans, instead of treating the question as a whole. What I propose is, to widen the base of the inquiry, by placing the whole history of the pointed arch before you; and if I succeed in doing this distinctly, though it must be very succinctly, you will be as able as I am to answer the previous question for yourselves, as the whole will resolve itself into a question of probability. The principal point, however, is to place the facts of the case before you. In doing this, I shall have to bring before you four different series of pointed arches.

The first, commencing with the ancient known buildings, and extending down to the period of the Roman empire.

The second, commencing with the decline of the Roman influence, and extending to the present day,—in the countries of the east, to which these two classes of arches are confined.

The third class appears in the south of France alone, in the age of Charlemagne, and extends to the eleventh century, when it was superseded by the round-arched, or Norman or Lombard style; which last again gave way, in the twelfth century, to the true Gothic pointed arch, which forms the fourth class, and which prevailed almost universally over the whole of Europe till the time of the Reformation, in the sixteenth century.

There may, perhaps, at first sight, be some difficulty in admitting the four series into the category of arches at all, as none of them are constructed on the radiating principle; and in modern times, at least, the usual definition of an arch is,—"A curvilinear archivault, composed of two or more stones radiating from one or more centres, and so placed as to retain their position from their force and gravity, without the aid of cramps or other subsidiary means." We never build arches on any other principle, and consequently restrict the term to them. In the east, however, the case is different, and the word 'radiating' must be omitted, as there the arches are as often, perhaps more frequently, constructed by placing the stones horizontally, rather than in a radiating position; and I am not quite certain if, in some cases, we would not do well to imitate the practice, as it has the advantage of getting rid of the lateral thrust, to which I attribute mainly the durability of the specimen I am about to allude to; but be this as it may, and whether it is determined to call them only pointed *openings*, and not pointed arches, the history of the subject will never be correctly understood till we take both into account—for the second, I think, almost certainly arose out of the first.

The specimen I will name is from the third pyramid of Gizeh, and from the roof of the sepulchral chamber. It has perhaps less title, in one respect, to be considered as an arch than any of the others, as it consists only of two stones; but it is interesting, as showing how early the curvilinear form, with a point in the centre, was used, and, consequently, how familiar it must have been to the architects of all ages.

The second example is from the pyramids of Meroe. Its age is not very well determined, but I do not think it can be far from the period I have assigned to it, or about 1000 B.C.; at all events, it is anterior to the age of Greek or Roman influence, which is all that is necessary for my present purpose. Mr. Hosking is quite positive about its being a radiating pointed arch; though, without his distinct testimony, I would have been rather inclined to believe that it was horizontally constructed; at least, I do not know of any other of that age built on the same principles. But assuming it to be as described, if radiation and thrust are the true characteristics of an arch, these two have, in this respect, more title to be considered as arches than the following, the first of which is from a tumulus near Smyrna, in Asia Minor, and interesting as being, both in size and purpose, almost a counterpart of the chamber in the third pyramid. The form of the vault, however, and the mode of construction, vary considerably in the two examples, though they are still so similar as to admit of their ascribing them to the same idea at least, though not, perhaps, to the same people.

The next example is of a gateway near Missolonghi, an instance which I quote here as serving to explain the mode of construction adopted in these buildings, which is simply that of allowing the corners of masonry to project beyond one another till they meet in the centre, thus bridging over the opening to be spanned.

Another example, from the tombs of the Atridæ, at Mycenæ, combines the methods shown in the two last, the curvilinear form being retained for the vault as in the first instance, the straight-lined for the openings, but with the addition of an architrave cutting across the opening at a certain height, which was, no doubt, a great improvement on the preceding mode.

A further example, from a city gateway at Arpino, in Italy, shows the curvilinear form adapted to an opening, which, in the previous examples, was only applied to vaults, and was so obvious an improvement, not only from its greater beauty, but from its convenience, that the straight-lined form was never afterwards, so far as I know, adopted.

In an example from an aqueduct at Tusculum, we have a further innovation, inasmuch as the horizontal construction is not continued to the summit, but an Egyptian arch is used to complete it. It is evident that the next step to this would be using the radiating arch, as we now use it, but it seems to have stopped there, for some time at least, as I shall have occasion to show in speaking of the Saracenic style in India.

The last of this series I shall name is from a gateway at Apos, in Asia Minor, which, from the character of its masonry and other

circumstances, is known to belong to the best period of Greek art, and is, in fact, coeval, or nearly so, with the Parthenon. Notwithstanding, however, the perfection of its masonry, it retains all the constructive peculiarities of the preceding examples. The opening is roofed, if I may use the expression, by a horizontal architrave, and a horizontal arch placed over it to discharge the superincumbent weight, as in the tomb above quoted, and the well known Gate of Lions, at Mycenæ. One, however, of its most singular peculiarities is, that on the inside the discharging arch is semicircular, though constructed horizontally, and of the same course of stones as the outer or pointed arch, showing, I think, evidently, that though the architects used the horizontal construction, they could not be ignorant of the principles of the radiating arch, for nothing can be more clumsy and unscientific than an unbroken circular form and horizontal construction, and I am convinced it never would have been adopted in this instance, but from its familiarity rendering it beautiful in the eyes of the architects.

These examples are, I believe, sufficient to explain all the peculiarities of this mode of construction; though, if it were worth while, their number might be multiplied to almost any extent, for they exist not only in Asia, but in Italy and Greece, and indeed in all those countries inhabited by those races whom, in my "Historical Inquiry into the True Principles of Beauty," I have called Pelasgic, and they seem to have formed a substratum to all the other nations of Europe, and to most of those in Asia also.

With the appearance of Rome, however, this form entirely disappears from the countries to which her influence extended, and is universally supplanted by the circular radiating form, which, whether she invented it or not, she introduced everywhere, and left it in every country to which her dominion extended, as one of the most marked and distinguishing architectural memorials of her sway. So completely did the Roman form supplant the older Pelasgic one, that I do not know of a single instance of pointed arch of any form or mode of construction during the period of her supremacy, in any of the countries to which her influence extended.

The moment, however, that her power declined, the pointed form re-appears; but it is not in Italy or Greece, where her influence had been so innate and so long felt, that the previous civilisation and races had been entirely obliterated, but in Asia, its native seat; and I am convinced it would also be found in Egypt, if we had a single building of the period; but, as none exist, we are forced to recur to the very few that remain in Syria and Western Asia for our examples.

The first of these that I shall quote is from the church of the Holy Sepulchre, built by Constantine the Great, now known as the mosque of Omar. Its arches are throughout pointed, but so timidly as to be scarcely observable at first sight, as might indeed be expected at the first revival of a long obsolete form. You will observe, also, that besides the pointed arch which looks so strange mixed with Roman details, as we here find it, it contains reminiscences of another Pelasgic form, inasmuch as the architrave rests freely on the supports, relieved from the superincumbent masses by a discharging arch, as pointed out before.

This is the only specimen of an architectural building with pointed arches of the age to which I am able to refer on this occasion,—a deficiency which arises from two causes; first, the paucity of buildings of any class erected in these countries during the period that elapsed between the age of Constantine and that of Mahomet, so that whether we are looking for round or pointed arches, we would be almost equally at a loss to find examples. The church in Bethlehem, which has no pier arches at all, is the only other building I know of. In Syria and in Egypt not one specimen of any such remains; nor do I know of one in Asia Minor; and, of course, it will not do to look for pointed arches either in Italy or Greece, where the Roman influence remained paramount far beyond the limits of the period we are now speaking of. Another cause of the want of examples is, that they have not hitherto been looked for, but wherever a pointed arch is seen it has hitherto been put down at once as belonging to a Saracenic edifice or to some other epoch; but once it is known that the pointed arch is a characteristic of the age, and antiquaries open their eyes and look for them, I am convinced many will be found. In the meanwhile I am happy to be able to quote so valuable an authority as the Baron Texier in support of my views. I need scarcely remind you that the baron was employed by the French Government for many years in exploring the countries of the East, and is now publishing the result of his researches, under the direction of the Minister of Public Instruction, and I believe, that both from his experience and his character, there is no man living more qualified to give an opinion on the subject than he is.

In speaking of the Cathedral of Am, which is built with pointed arches throughout, he says, after quoting an inscription, which proves that it was finished in the year 1010, "It results from this document, that at a time when the pointed arch was altogether unknown, and never had been used in Europe, buildings were being constructed in the pointed arch style in the centre of Armenia.

At Diarbekr there is an extremely remarkable building now converted into a mosque, which is also constructed with pointed arches. The Armenians call the building the palace of Tigranes, and there is nothing to show that it may not have served as a residence to that prince. The lower story of the palace is ornamented with columns, Roman in style, and with capitals of the Corinthian order, tolerably well executed. These columns support pointed arches. The order of the upper story is also of a very ornate Corinthian order. The friezes and cornices are executed according to the principles of Roman art of the fourth century; nevertheless the pointed arch is found everywhere mixed with the architecture as if it was currently practised in the country.

I have already spoken of the palace at Modain, the ancient Ctesiphon, a building of the sixth century, whose gigantic portal is also of pointed architecture."

The baron then proceeds to remark, "Although it is difficult to fix exactly the period of the introduction of the pointed arch into architecture, it is impossible to draw any certain conclusion regarding the date of a building from its being used in it. The question is at present far from being solved in a satisfactory manner. One thing, however, is certain, that the pointed arch is an eastern invention, and was employed in Mesopotamia long before it was known in Europe."

From the above description it is evident that the upper story at least of the mosque at Diarbekr is a building identical in age and style with the so-called mosque of Omar at Jerusalem, for the words the baron uses in speaking of it apply as correctly and graphically to the one as to the other, and if he is correct in ascribing the lower story to Tigranes we have at least three specimens on the Tigris, extending from the Christian era to the Mahometan conquest, and, though few and far between, it must be confessed, I have no doubt but that with a little industry more may easily be discovered, and the lost links in the chain thus supplied.*

JAMES FERGUSSON.

OSBORNE.—LIGHTNING CONDUCTORS.—We learn that on the 8th a heavy electrical discharge fell on her Majesty's palace at Osborne, and did some damage to the new tower now about being completed at the east end of the building. Some of the cornice was destroyed, the windows shattered, and three men struck down. The high tower and flag-staff at the west end, fitted with lightning-conductors, was unharmed. The tower which suffered, not being complete, had not any such protection, and was about 200 feet distant from the more elevated tower at the west end, and which escaped damage, thus furnishing an illustration of the advantage derived from a system of electrical conductors in disarming the thunderstorm of its terrors.

* The paper, of which this is the commencement, was read at a meeting of the Royal Institute of Architects on the 18th instant. We shall give the remainder hereafter, together with a report of the discussion which followed.

AN ATTEMPT TO EXHIBIT THE TRUE PRINCIPLES OF ARCHITECTURAL AND PICTORIAL EFFECT IN REFERENCE TO STREETS, AND TO TOWNS GENERALLY.

BEFORE proceeding to our immediate subject, it will not be amiss, briefly to remind you what is the real nature and influence of architecture generally, and its rank among the arts.

Architecture, in its largest sense, comprises a scientific and mechanical department, as well as an artistic; and they are most intimately connected; the latter arising in a great measure out of the former; but it is with the profession as a fine art that we have chiefly to do in this paper. Architecture as such is worthy of the consideration of the most exalted intellects; it has an influence from infancy upon our daily life, entwines itself with household virtues, and excites in our breasts a love of country and home. In its loftier effects, with painting and sculpture (from which it differs only in mechanism and application), it hallows and ennobles the mind, elevating it above trifling and vicious pursuits, and becomes, in the words of Fuseli, "the highest degree of education—the ultimate polish of man." For in the architectural pile, no less than in the poem, may be enshrined "undying thought." York Minster and St. Paul's Cathedral are equally exponents of mind with the volumes of Shakespeare and Milton. A piece of genuine architecture may be *read*, and become productive of the loftiest emotions of which the heart is capable. Erecting an edifice then, artistically, is the expressing of a sentiment, giving to stone and wood an idea, "fixing" as Bulwer has it, "into substance the invisible." Coleridge calls a Gothic church, "a petrifaction of religion." Goethe terms architecture, "frozen music." Madame De Stael has the same beautiful conceit, and Lamartine in his "Memoirs of my Youth," calls St. Peter's church "an apotheosis in stone, a monumental transfiguration of the religion of Christ."

We run counter to analogy if we deny this, and suppose that the spirit of beauty embodied in the creations of the artist, is intended merely to please the eye while it continues a novelty. It is opposed to the whole economy of nature, of which art is a reproduction; "A thing of beauty," sings the poet—

> Is a joy for ever;
> Its loveliness increases, it can never
> Pass to forgetfulness.

There is an instinctive yearning after the beautiful in the breast of every man, and the mission of the architect is, with the poet, the sculptor, and the painter, to co-operate with nature in ministering to that want.

Houses were so arranged in cities as to form regular streets, from the earliest time; frequent mention of them occurs in Scripture (the earliest in reference to Sodom in the days of Abraham), where much figurative use is made of the word. "The golden streets of the New Jerusalem" are familiar to all readers of the bible.

The streets of Babylon are the first of which we have anything like description. They are said to have been in straight lines, fifteen miles long, and at right angles to each other. The houses were detached and richly ornamented towards the streets. The streets of Athens were not remarkable for beauty; the houses were ill-constructed and mean, the lanes dark and narrow; some, as may be gathered from ancient authors, were tolerably spacious; of a few mention by name has been made, as the street of Theseus—the way which led to Eleusis,—Tripodian-street—a way near the Prytanæum,—and some others.

However erroneous the principles on which streets in various times and cities were formed, the subject was generally deemed one of importance; street magnificence having not unfrequently been an object of ambition to kings and conquerors, not only in ancient but in modern times; and so much talent and wealth have of late been expended, and are now expending, on improvements in our large towns, that an inquiry into the true principles of effect in reference to street-formation is not without importance, and cannot be altogether void of interest to the present meeting.

It has been the practice, as is well known, in the improvements alluded to, in London, Liverpool, Birkenhead, and elsewhere,—in fact t is a feature of the day, to form the new streets

invariably in straight lines, with long double rows of attached houses, exactly alike, and frequently to unite under one design, in the form of terraces, a number of dwelling-houses, giving to a dozen or more of such the appearance of one large mansion or palace. The object of the following paper is to show that these and some other practices have not been adopted in conformity with correct principle. With respect to the straight line, its use, I apprehend, originated in a just aversion to the crooked, jagged, tortuous forms, with sudden (almost right-angled) bends, so much reprehended in the old cities, and under the impression, on the part of the projectors, that by introducing a form the antithesis of all these, they would doubtless be right. In other words, the re-action in favour of a better practice was not attended by a due consideration of the laws upon which beauty depends. They took the course diametrically opposite to the rejected one, instead of instituting an inquiry into natural principles. In the practice of invariably joining houses together, and putting them in "uniform," principles everywhere manifested in nature have been unheeded, viz., individuality and diversity. Between human habitations and human beings an analogy exists, and if we look into nature in reference to the latter, we find a plan pursued very different to that of builders; nature never loses sight of individuality; she does not occasionally usher into the world, to lighten, as it were, her task of invention, half a dozen or a dozen men, exactly alike in size, form, and feature—fac-similes of each other; and we should shrink with horror at the sight of a dozen corporeally attached men; yet the practices to which I have alluded in reference to houses, are no less opposed to the dictates of good taste and enlightened judgment than such phenomena would be to the usual course of nature. In short, it cannot be disputed, if we follow the analogy of nature, that in dwelling-houses, as in the human species, there should be individuality, and that houses for different persons to inhabit should be of different designs, if not suiting the varied tastes of the occupants, at least symbolising the peculiarities of human character; and, in reference to street formation, that every house should not only be a picture in itself, but that the houses collectively should form a picture of greater variety, and that they should be, where possible, arranged with respect to composition, light and shade, breadth, colour, union and harmony with the ground, variety, and other qualities, just as a skilful artist composes his picture.

We shall, however, look in vain for the highest attributes of street perspective in the straight line, however beautiful and varied the buildings, individually, may be; that continuity of charm, or series of fine effects, of which a street is capable, cannot, I consider, be given to a straight line, however great the means employed. I am not insensible to the graces of columnar perspective as exhibited in an avenue formed by colonnades, whether interior or exterior. The long drawn aisle also of our Gothic cathedrals awakens ideas of the sublime. Than the vista of the pointed nave, continued by that of the choir, combined with chantries, screens, and shrines, nothing can be imagined more overwhelming in effect, or more in keeping with the sacred destination of the edifice. They symbolise infinity, and are productive of mysterious and sublime sensations. I mention these, because I have heard them cited in support of the straight line in reference to streets; but the office of such, I consider, is confined to a surprise—to a single and occasional view,—and look upon that office as fulfilled when they have produced their first overwhelming effect upon the spectator, to which end every means has been directed. Whilst streets, on the contrary, are for promenade and constant use, and a succession of effects and ideas are required.

The line I would suggest as most conducive to this, is one in which nature may be said to revel, viz. the winding serpentine line of a very gentle sweep; or the simple arc of a circle. Streets so formed, I consider, would not only be susceptible of the highest architectural beauty, but possess that exhaustless charm, that endless variety of effects which I have endeavoured to describe.

It will be understood, I trust, that I do not recommend these curves for the beauty of the lines themselves, as in a picture,—their own immediate beauty could not appear, except upon the map; the merit of the curve consists in its continually altering the point of view, and in the variety and beauty it thus produces. In such streets, the spectator of intellect and susceptibility would find a continued development of beauty, and as the disposition of light and shade, and atmospheric effect, is never the same for two minutes together, the variety will seem infinite, the pleasure endless; whilst on the other hand, a straight street flanked on either side by columns, however lavishly the riches of architecture may have been expended on it, must soon, not only cease to please but grow wearisome to the eye.

The mathematical fact that the straight line is the shortest distance between two points, cannot, I consider, be urged against this in reference to utility. In giving a winding line to a leading thoroughfare running through a town, as a trunk for branch streets, no ground would be lost. The gentle curvature which I recommend, would make but little difference in the length, and the passenger would be recompensed for a longer walk by its containing a proportionately greater number of shops or places of business, while its devious course would enable it to embrace a greater number of distinct points or localities necessary to be united.

I do not insist, however, upon the curve as a form that should be invariably employed; there are circumstances under which the straight line would be more proper. In short streets, for instance, running from one great thoroughfare to another, the latter form would be most befitting, as no purpose could be answered by the curve. *Width* is the chief means of giving effect to these. Neither can the detached principle be insisted upon, except in streets where magnificence is the leading aim. The high value of land in the centre of a town would forbid it. What I would invariably insist upon, is the detaching of character—individualizing the houses; and, after all, that is the most important point, as it immediately produces the great desideratum—variety; while the other qualities for which I contend, do it in but an indirect manner.

To a curved street, distinct character to the houses is an advantage which should not be dispensed with; it is requisite to the full development of that variety which the eye requires, but in a straight street it is *absolutely necessary*, as an escape from the most wearisome and complete monotony: in such a street the houses should present every variety of form, size, hue, style, and design, and thus produce the greatest possible change of sky-line.

There are four streets in the city of Oxford that will serve as examples here—two ancient and modern; of either kind one is curved, the other straight; in the ancient ones the houses vary in character, in the modern ones they are all alike. To any unprejudiced mind that examines and compares the several effects of these streets, the general truth of the remarks I have made, will, I think, be apparent, without further comment of mine.*

I am aware that the projectors of modern streets in adopting the straight line have had ample precedent. If we turn to the great cities of ancient and modern times, which have been executed throughout or for the most part upon a complete and digested plan, we find, though magnificence has been the leading aim, that this principle has been followed. Babylon, as I have said before, was built in straight lines, each street crossing the other at right angles. It had, however, one quality conducive to the pictorial—the houses were detached.

In Washington, evidently intended by its founders to unite in its plan all the beauties of which a city is capable, the same principle has guided, though in many respects it is an advance upon Babylon and others: besides its intersection by the principal streets running due north and south, from the president's house, the capitol, and other important points of the city, run diagonal streets, east and west, connecting them with other ornamental and imposing objects, which with the former close the perspective at either end: this arrangement is well worthy of notice, it tends greatly to promote diversity of view, and is highly conducive to grandeur of general effect. There are open areas at the intersection of the principal streets, formed into various regular figures, destined for the reception of statues and obelisks to their eminent men; the great leading streets are 160 feet wide, with not only a foot walk and carriage way, but also a gravel walk, planted with trees on each side. St. Giles's-street, Oxford, in all probability suggested this arrangement.

The streets of Philadelphia, and of most of the new towns of America, are straight and cross each other at right angles.

In Rome, some of the principal streets are of considerable length, and by dint of churches, palaces, and fountains, have an imposing effect: the Corso, which contains several palaces ranging in a line with the houses, is perhaps the finest; but the streets are perfectly straight. The streets of the principal towns of the Romans were straight, and Tacitus informs us that for protection from the sun they are so narrow that Pompeii was called a city of lanes. Antinöe, built by Adrian, and considered a perfect model of the Roman city, had its streets straight. The principal ones had on each side of the way piazzas 5 or 6 feet broad, and running the whole length of the street, by means of which the city from one end to the other might be traversed without exposure to rain, or to the heat of the sun.

In Mexico, almost entirely rebuilt after its conquest by the Spaniards, the streets are straight, and so regularly arranged, that, if uniformity were identical with beauty, it would perhaps bear the palm over all other cities.

I can, however, refer to cities whose chief beauty may be traced to the agency of the principles for which I am contending. The amphitheatrical form of Naples is evidently the secret of its beauty, and no street in Washington, Rome, or in any other city, where the straight line prevails, can vie with the Strada di Toledo, or with the beautiful streets upon the bay.

Venice also, beautiful as a dream, may be cited for the same reason. The Grand Canal, of an expansive width, takes a serpentine course through the sea-girt city. The view from the Rialto along this canal, flanked on either side by the most gorgeous palaces, churches, domes, and spires, with their sculptured arabesques, and purple marble, where the beauties of art as reflected on the pictures of Claude and Canaletti and our own Turner stand forth as rivals to those of nature, must, to those who are capable of appreciating the glories of sunshine and shadow, have an effect that words are inadequate to describe. "Detail after detail," says an eloquent writer, "thought beyond thought, you find and feel them through the radiant mystery, inexhaustible as indistinct, beautiful but never all revealed, secret in fulness, confused in symmetry as nature herself is to the bewildered and foiled glance, giving out of that indistinctness and through that confusion, the perpetual newness of the infinite and the beautiful."

But I have an example to refer to nearer home, in the interesting city of Oxford beforementioned, where though architectural beauties meet the eye at every step, and there is perhaps a greater amount of architectural wealth, in proportion to its size, than in any other city of the kingdom,—though colleges, churches, and halls are the chief objects in the view, the whole charm may be traced to that wonderful variety of form, hue, disposition, and style, that harmony with nature, and obedience to her laws, which is seen around.

The High-street, like the Grand Canal, is an embodiment of Hogarth's line of beauty. It is of a gentle flexuous curve, meandering through the city, and exhibiting beauties confessedly beyond what any other European city can boast; beauties which have at least been felt by Wordsworth, who in a sonnet on Oxford, forgets not the "stream-like windings of that glorious street." "Sweeping along," observes an old writer, "in a gentle curve of a most expansive width, and bordered by a picturesque assemblage of public and private edifices, it is indeed, perhaps, without a rival. In viewing it the eye does not repose on splendid uniformity, but on an enchantingly varied whole, and when, satisfied with viewing the entire perspective, we commence an examina-

* The four streets of Oxford are, High-street, St. Giles's-street, Beaumont-street, St. John-street.

tion of individual beauties, we perceive with delight, that of such the graceful curvature of the street presents a new one at almost every step."

I admit that many of the finest cities have been partly built by nature, which had a great deal to do materially and directly with the formation of the streets, and with their architectural beauty; where the main charm may be traced to the original form of the ground, and nature might be said to have laid out the foundation. It was given as the opinion of Lady M. W. Montague, and noticed approvingly as such by Sir W. Scott, that the most interesting district of every country, and that which exhibits the beauties of natural scenery in greatest perfection, is that where the mountains sink down upon the champaign, or more level land: now the same principle operates in towns and cities in reference to the architecture; for a similar relative position of the ground imposes forms on streets which present the beauties of architecture in greatest perfection, giving a charm to the various buildings which they would not otherwise possess. The pyramidal principle is one of the secrets of beauty in architectural grouping, causing each object or a mass of objects to increase in lightness and elegance as it rises in the air, and recedes from the eye. "The nature of picturesque composition," says Fuseli, "is depth, or to come forward and recede," and this description of grouping is much aided by an undulating character of ground. The side of a hill as the site for a city is thus favourable for the production of fine architectural effects, as may be seen at Bath and Edinburgh, where the houses rise one above another, and show themselves in every variety of relative position. The situation of Constantinople, upon small hills, naturally produces this pyamidal composition, and the effect of it as described by travellers is magical.

In short, the more the works of man are modified by natural circumstances of situation and scenery, and the more the architect takes advantage of such circumstances, or is guided by them, the more beautiful and picturesque they will be.*

SAMUEL HUGGINS.

MAY THE GREEK DORIC BE TRACED BACK TO EGYPT?

OWING to my absence from London in a remote part of Wales, I have but just now seen the account of the meeting of the Institute of Architects on the 21st of May, in THE BUILDER of the 26th. Perhaps it may be still not too late to offer a few remarks on the main subject of debate on that evening, viz., "May the Greek Doric be traced back to Egypt?"

The tombs of Beni Hassan, hewn in the cliffs of the Nile, were the monuments on which the discussion chiefly turned. These tombs have been pronounced by the Egyptian antiquary to be of an extreme and patriarchal age. The architect, without visiting and examining the monuments himself, and without sifting the evidence for this extreme antiquity, has assumed the antiquary's dictum to be indisputable; and finding an extraordinary resemblance between some of the characteristic features of the Greek Doric and those of these monuments, he proceeds to argue, that in these tombs we have the type of the national style of Greece: or, rejecting this hypothesis as impossible, he maintains the contrary opinion, that the resemblance, though striking, is fortuitous.

But it is clear that a preliminary and most important point is to determine the real age of the monuments; and in doing so I believe we shall find numerous and unmistakeable arguments that their age has been strangely miscalculated, and that instead of being of the patriarchical epoch assigned to them, they are of an age not long anterior to the conquest of Egypt by Alexander, and therefore long subsequent to the age of Pericles and the Parthenon. These arguments may be referred to two heads—1st, those deduced from the style of architecture and painting; 2nd, those drawn from a comparison of the hieroglyphic inscriptions.

* To be continued.

1st. From the architecture. The columns of Beni Hassan which so strikingly resemble the Doric of Greece never occur in any of the *great* works of Egypt. They are only found in a few rock-hewn tombs, and in two or three small temples that have been repaired *at a very late period*. If the Greeks had indeed borrowed their architecture from Egypt, should we not have found its prototype in those vast temples and palaces raised in the palmy days of her power and monumental magnificence? These tombs of Beni Hussan have porticoes leading to the inner chambers. Such porticoes are never found in the early tombs at Thebes. The columns within are tall and slender—those in the ancient tombs are square and very massive. The walls are coated with a stucco coloured to imitate granite; but imitative stones and woods always indicate a highly artificial, not a primitive age. The cornice of the portico, instead of the large *cavetto*, which is so characteristic of Egyptian art, has a flat projection supported by reeds or mutules; and in this respect it is absolutely unique in Egypt. Not a single other example of the kind can be found throughout the valley of the Nile. Now to imagine that such a singular coincidence with a characteristic feature of Greek architecture should have occurred by chance, is contrary to all the analogies of art. Shall we then conclude that this solitary example was the type from which the Greek cornice was developed? It were equally reasonable to conclude when we light upon an architectural member in Syria having no resemblance to anything commonly found in eastern buildings, but frequent in our own Gothic works, that it had been introduced into Europe from the east, rather than that it was indigenous here and transplanted thither. We are compelled, then, to conclude that this mutule cornice was borrowed *from* Greece; and if the cornice, so also the columns. To complete this class of proofs, we find columns similar to those of Beni Hassan employed in a small temple at Thebes, with an inscription stating that the edifice was restored during the reign of Achoris, or about half a century before the rule of the Ptolemies. It may, perhaps, be urged that these columns formed part of the original work:—but the objection is answered by the fact that they are built of stones which had themselves formed part of an earlier edifice, as is attested by the existence upon them of hieroglyphics *reversed*, dating from about the seventh century B. C.

The style of the paintings on the walls of the tombs is not less indicative of a late date than the architecture. The figures have none of that spareness and lankness of limb which always distinguishes the works of the early artists. They are also in a much better state of preservation than the paintings of the Royal tombs at Thebes, although the hypothesis I am combating would make them of much older date than these.

II. The second class of proofs of the comparatively modern date of the tombs of Beni Hassan, is supplied by the hieroglyphics painted upon the walls. The inscriptions on these walls are very lengthy, and no lengthy hieroglyphic inscription has ever yet been satisfactorily interpreted, nor will be until the knowledge of the ancient language of Egypt has advanced far beyond its present limits. Still whatever evidence is furnished by the inscriptions, appears at first sight to establish the extreme antiquity of these works; indeed, the assumption of their high antiquity rests solely upon such evidence, for here we find the name of OSIRTASEN, a very ancient king. But first it may be observed that the mere presence of an ancient name is no proof of the coeval antiquity of the building. Thus the columns of the little temple of Medeenet Habou, at Thebes above referred to, though bearing reversed hieroglyphics of the present dynasty of the Psammitichi, are inscribed with the name of Thothmes III. who reigned nearly a thousand years before. It may be required, however, that we should offer some reasonable account of the presence of the name of Osirtasen on the Beni Hassan tomb. And such an account may be furnished, and thus all the anomalies of the case be explained.

Those who have paid any attention to the subject are well aware that in the hieroglyphic inscriptions every Pharaoh is commonly introduced with two names, each inscribed in an oval ring; that each name is preceded by a title never found attached to the other name; and that, as one of the two always precedes the other, it has been distinguished by antiquaries as the *prenomen*. The second name is phonetic, the characters having an alphabetic value, and together expressing the proper name of the king, as RAMSES OSIRTASEN, &c. The first oval, or prenomen, was supposed merely to express the peculiar *titles* assumed by the individual monarch who bore it. But I have demonstrated from an examination of the prenomens of the Ptolemies (with whose descent and lineage we are familiar) that the prenomen expressed much more than this. It may be compared to a modern coat of arms. In it were blazoned the bearings derived from the prenomen, or coat of the father; and it indicated his claim to the throne inherited with the right of quartering the arms.* Now it is very remarkable that *Nectanebo*, of the last of the dynasties of Pharaohs, B.C. 379, assumed the prenomen of this ancient king *Osirtasen*. To do this was equivalent to claiming descent from him; and as Nectanebo was the founder of a new dynasty, it is not improbable that his claim to the throne rested upon his real or imaginary descent from this ancient monarch. If so, what was more natural than the introduction of his name in an inscription? I feel no doubt, then, that these much-talked-of tombs of Beni Hassan were the work of the late age of Nectanebo, forty-eight years before the conquest of Egypt by the Greeks, and that the name of Osirtasen was introduced as the ancestor of the reigning monarch.

Fortunately, we have an independent proof of a similar proceeding in another case. Pliny mentions a certain obelisk as having been hewn out by this Nectanebo, and set up by one of the Ptolemies at Arsinoe; and that the apex was subsequently cut to receive a metal ornament, no doubt similar to those now seen on the obelisks at Rome. At the present day there exists in the very locality he points out an obelisk actually cut at the apex as if to receive the metallic ornament proposed. We cannot hesitate, then, to conclude it to be the one he alludes to. But this obelisk, which he attributes to *Nectanebo* (to whom I refer the Beni Hassan tomb), is, like the tomb, inscribed with the name of the old king OSIRTASEN, to whom the tomb has been hitherto referred; and this ancient name is preceded by the title, "Good God," a title which I have observed to be usually applied to deceased monarchs. No reasonable doubt, then, can remain that the obelisk was, as Pliny says, hewn out by Nectanebo, and inscribed to his ancestor, Osirtasen, as recorded on the obelisk itself. And if the obelisk is to be given to Nectanebo, the tombs of Beni Hassan cannot but be inscribed to him too.

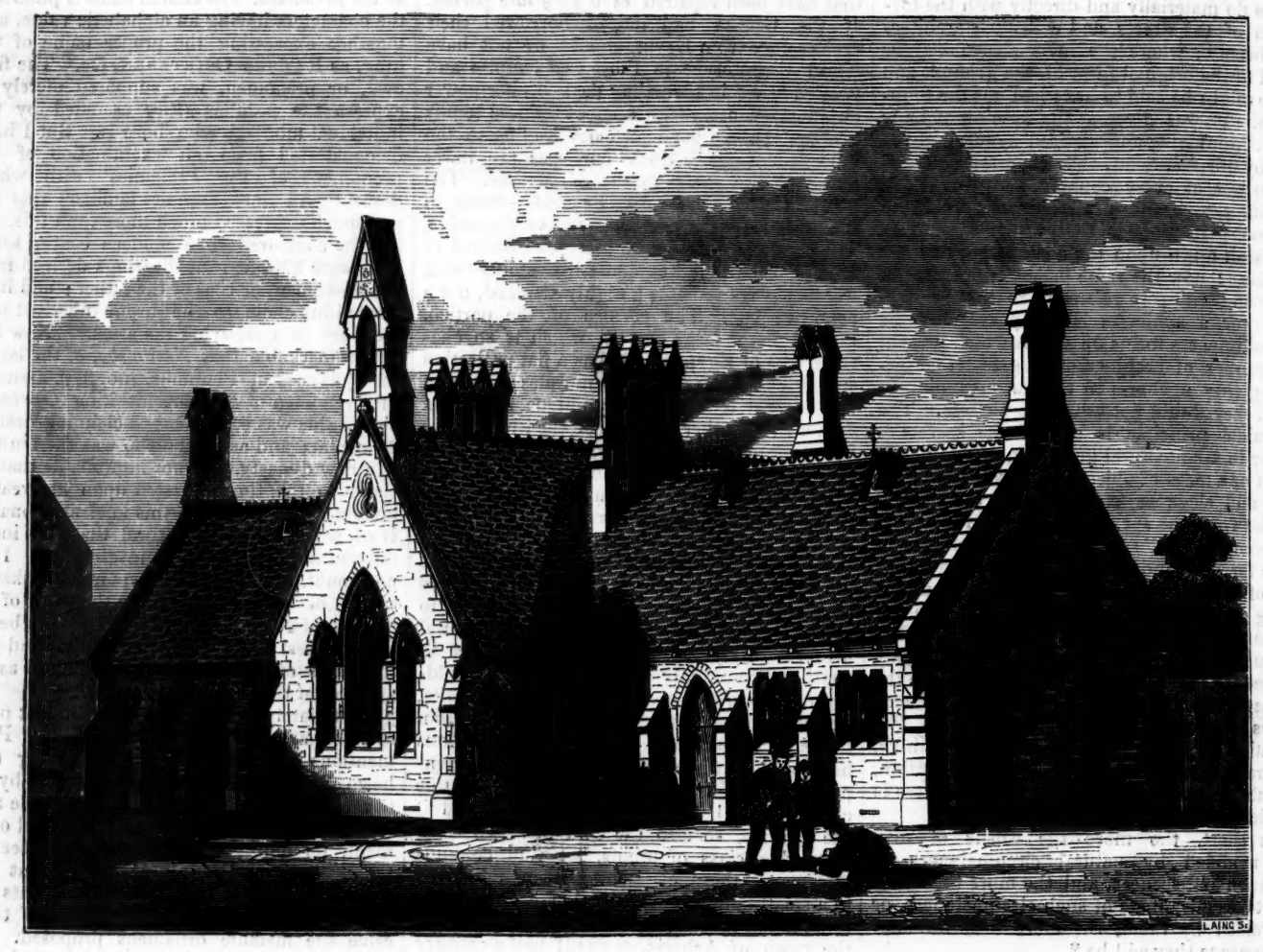
Instead, then, of referring them, with Wilkinson and others, to the patriarchal age of Joseph, and imagining that we behold depicted on the walls the presentation to Pharaoh of the prime minister's eleven brethren, we must assign to them the more moderate age of B.C. 370; and having established this fundamental fact, innumerable historic and archæologic difficulties immediately disappear. We have here columns much like those used in Greece. Instead of, with Champollion and others, beholding in this remote and rare example the prototypes of the magnificent architecture of Greece, we have merely a humble imitation of the temples with which Greece was then studded over, for Pericles had already ruled, and Phidias had already wrought. And what more natural? For in this age there was constant communication between Egypt and Greece. On the walls of the chambers of the tombs are depicted the trades, games, and amusements of a very advanced and highly artificial age; curious feats of agility, grand banquets, and elaborate musical entertainments. However strange this may appear when assumed of the early age of Joseph, it is just what we might have expected in the reign of Nectanebo, when Egypt was emphatically an old country, and the people had been a polished community for more than a thousand years.

G. H. WATHEN.

* See "Arts and Antiquities of Ancient Egypt," by G. H. Wathen.

FREE SCHOOLS, YARMOUTH.

MESSRS. BROWN AND KERR, ARCHITECTS.



FREE SCHOOLS, YARMOUTH.

ANNEXED is a view of some schools about to be erected in Yarmouth, under the direction of Messrs. Brown and Robert Kerr. They are to accommodate 180 boys, 180 girls, and 200 infants, class-rooms additional being provided behind in connection with the boys' and girls' school-rooms. The building is to be erected partly by subscription and partly by the usual grants.

The walls are pebble-faced, and brick inside; the dressings white brick and (a little) stone; the roof is covered with "architectural tiles;" the heating is by open fires, and the ventilation by spare flues in the chimney-stacks and openings in the ceiling (they are ceiled to collars of trusses) into the roof, communicating with the outside by the gablets shown at the ridge.

We should have fears as to the efficiency of the form of chimney-top adopted. In one case where we tried a similar arrangement, it failed to answer its purpose, and disfigurement afterwards was the result.

MAINTENANCE OF ANCIENT MONUMENTS.

IT is now useless to lament the irreparable loss which the country has sustained from ignorance and cupidity, more devastating and levelling than the pious furor of the Reformation, or the wild and fervid enthusiasm of Cromwell; this has been ameliorated to some extent by the efforts of modern essayists and journalists, and there is certainly a feeling abroad to respect the altars and graves of our forefathers. None, however, can have viewed the numerous beautiful spots scattered along the course of the Thames, and in the counties around the metropolis more especially, without regret, when they see the tower of an ancient edifice alone standing, whose stability has been too great for cupidity and ignorance; where the ancient church has been supplanted by some vile abortion of brick and stucco by some scheming vestryman dealing in such articles, who at the same time probably profited largely by the massive materials from the despoiled and aggrieved edifice. The improvements of the moderns in the erection of an organ-loft, as at Christchurch, Hants, and chiselling away rich canopies of a screen to make room for it, the removal of ancient monuments in other cathedral buildings, for the miscalled improvements of screens, the removal and packing away in the stone tower of Hackney church of numerous beautiful brasses from the old edifice, eclipsed by a *handsome* modern structure, &c., are all evidences of this levelling spirit, which reverences neither the bones nor monuments of the dead.

It seems strange in these days of commissions, parliamentary inquiries, boards of registry and control, &c. &c., that ecclesiastical edifices should still be given over to the tender mercies of vestry boards, and indifferent and listless rectors or vicars.

A good case in point appeared lately in your paper, in the shape of an advertisement, for repewing the fine old church of Northfleet, in Kent, from the vestry clerk of that parish, inviting architects to send in reports and designs for the same, and offering 15*l.* for the first and 10*l.* for the second design. Just imagine the result—what respectable practitioner would attend to this? The effect probably is, builders, who are necessarily interested parties, alone compete, and the result is easily foreseen. The degrading advertisements addressed to architects must lower the profession in the eyes of the public, when the fact is considered, that such advertisements are encouraged by professional men or by pretenders to such a rank, whilst the system is acknowledged on all sides to be productive of the worst results.

J. B. R.

THE BRITANNIA TUBE BRIDGE over the Menai Straits, has been safely placed on its bed: we must postpone particulars till next week.

THE FARNESIAN GARDENS, ROME.

THE Farnesian Gardens at Rome are formed upon the slope of the Palatine-hill, and crown the ruins of the palace of the Cæsars; Cardinal Alexander Farnese caused them to be executed simply as a place for agreeable relaxation, not for an abode. The captivating nature of the spot chosen for the execution of this graceful architectural scheme, rendered it very eligible for the purpose to which it was to be adapted.

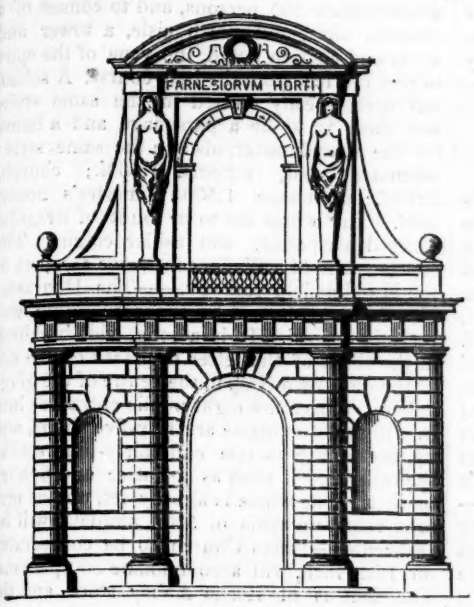
The site occupied by these gardens forms a vast platform, the fertile soil of which attracted the earliest inhabitants of Rome; it abounds, moreover, with highly interesting remains of gigantic structures, which, owing to their imposing character, were well calculated to inspire those who were engaged in the execution of works of a similar description. The views enjoyed from this favoured spot are very beautiful, and of an exciting character. In the immediate foreground are seen the stately remains of art, which attest the magnificence of ancient Rome; beyond are seen the fertile regions, stretching to the Apennines and to the sea. Such was the site which some of the best artists of the sixteenth century were called upon to embellish, and how successfully they have laboured to acquit themselves, those are sensible who have witnessed their efforts.

A glance at the plan will serve to explain the various parts; they consist of an ornamental entrance, a covered walk, a semi-circular court, flights of steps and sloping walks leading to grottoes, terraces, and pavilions, decorated with fountains, niches, and statues, the whole enriched with varied and luxuriant foliage, relieved and contrasted by marble fragments tastefully arranged,—the latter drawn from the inexhaustible mine of antiquity upon which the gardens are reared.

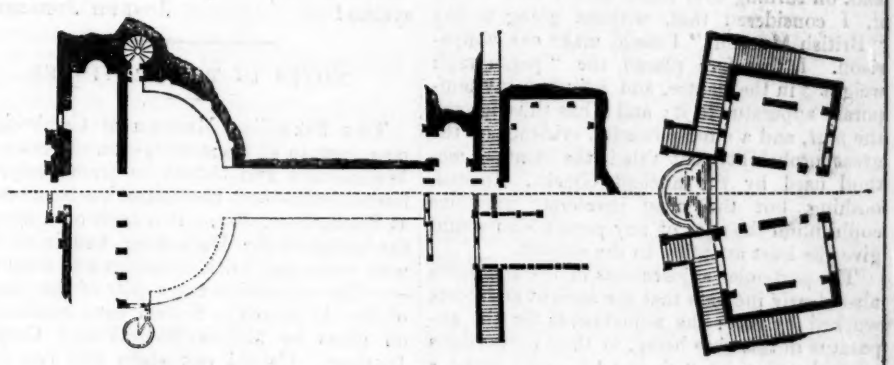
The garden entrance, which is here represented in its geometrical elevation, is the work of Vignola, to whom are also attributed the grotto and its approaches; the magnificent fountain, forming the back ground to the third ter-

THE FARNESIAN GARDENS, ROME.

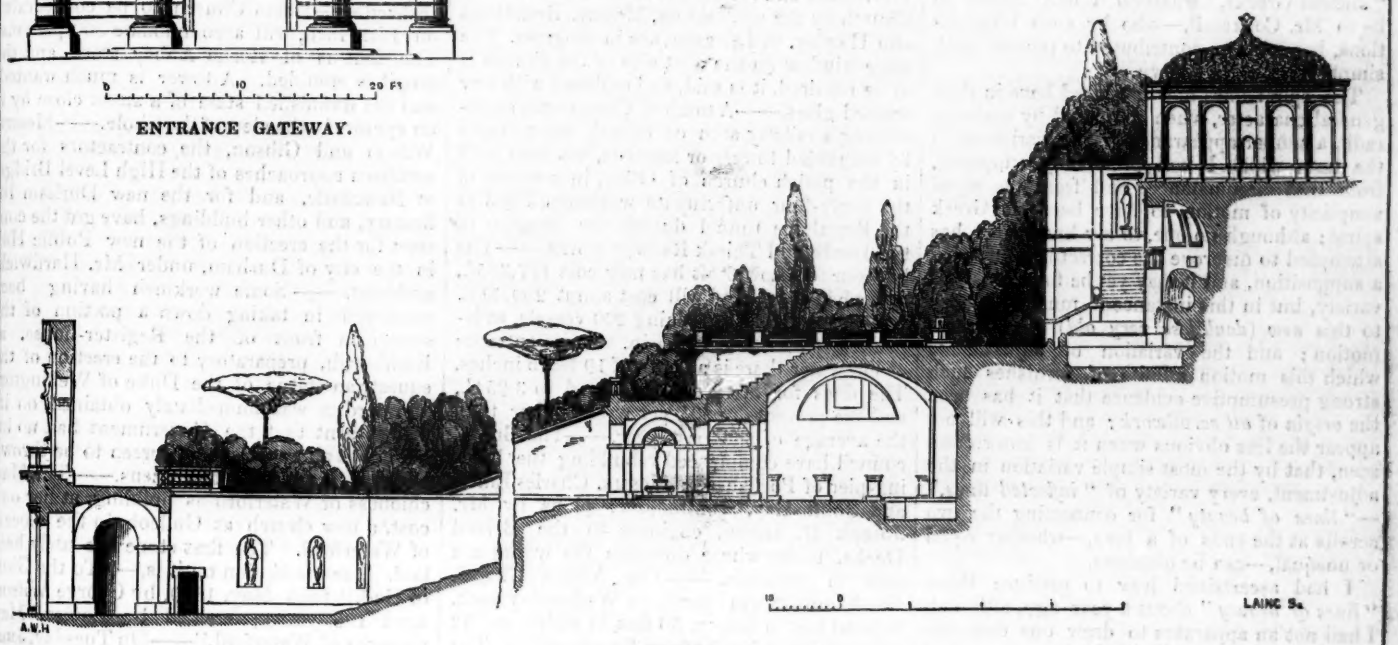
VIGNOLA AND MICHELANGELO, ARCHITECTS.



ENTRANCE GATEWAY.



PLAN.



SECTION.

race, with its semi-dome and rock-work basins are considered to be the work of Michelangelo, as also the flights of steps which, winding round on either side of the pavilions, lead to the upper terrace. The pavilions themselves, which served as aviaries, and crown the summit of the gardens, are the work of Rainaldi.

It will be remarked, that these buildings are placed obliquely, in order to enhance the beauty of the perspective view, as seen from the entrance gateway below.

It may be observed, that the Italian architects frequently adopted this peculiar mode of grouping buildings, with the view to add to their picturesqueness of effect, and that Bernini, in particular, often had recourse to this expedient both in the interior as well as in the exterior of the edifices which he erected.

The gracefulness of the entrance-gateway, and its fitness of expression as an entrance to a garden, cannot fail to strike the beholder. The graces of art have been lavished with a profuse hand upon this agreeable retreat, which must, in its pristine state, have resembled those enchanted abodes which are supposed to exist in fiction only. The whole composition, in fact, is the realisation of a poetical idea: its contrivers and designers were poetical beings. Those who visit Italy are made to feel how often the beauty of her landscape is increased by the magic of her architecture. Terraced or hanging gardens form a conspicuous feature in Italian landscape; and the Farnesian gardens are amongst the most beautiful of those which abound in the neighbourhood of Rome; and though now in a neglected state, afford valuable suggestions to those persons whose taste or calling leads them to attempt similar undertakings.

A. W. HAKEWILL.

PRODUCTION OF THE IONIC VOLUTE.

A MEMORANDUM.

June 5th.—This day I first drew a spiral revolution for a volute on the principle of having the apparatus fixed to the eye or centre. I had, however, known for a year, the motion which produced it; but I had no apparatus to carry it out, nor had it occurred to me, to *fix* one part *in* the centre of the eye. On the same day that this idea was presented to my mind, I first connected some sliding pencil sockets with strips of wood, and short pieces of pencil, and then attached a part to a fixed point to represent the centre of the eye of the volute. I now saw that it would do, and various ideas of a fixed centre occurred to me.

In the Grecian volutes it has been found that a separate piece has been inserted in the eye; and it has been conjectured from this that something had been previously introduced into the hole—it has been supposed a spiral shell, and that the volute had been formed by the unwinding of a string.

I therefore thought of a hole in the *drawing* board, in a *slate*, or in a *copper plate*, in which to fix a pin for a centre. Then in all these cases, I considered that the centre might be fixed by means of cement, without a hole, which in many cases and materials would be objectionable. I did not like to make a hole in my drawing board, and I had not anything handy or fit for the others. Next the "*weight of a pentagraph*" occurred to me. I took it out of the case, but the pin was too small for the hole in the pencil socket, but for a trial I thought it might do. I therefore cut off some slips from a card to fill the space the pin did not occupy. I then arranged my temporary apparatus, and drew the first revolution of a spiral by this means.

As soon as I had drawn this *one* line, I reflected, and considered that I ought to stop a while, and record my first impressions. I looked at the line, and at the apparatus by which it was produced; the one was so beautiful, and the other was so simple and obvious, that I felt as if I had seen it, and must have known it all before. It was so clear, that if a centre was thus fixed to a block of marble or stone, intended for a volute, a line, or part of a line might be drawn without any mould, and worked, and its accuracy tried with the greatest ease as often as might be wished; and, in fact, that the line could be continued, left off, or introduced when and where the sculptor might wish,—in short, that he or an artist on any material might design with the apparatus as he proceeded, bit by bit, in the execution of the work, during which the apparatus need never be in his way.

It was equally obvious that, where a centre could be fixed in the eye of any example of a Grecian volute in the British Museum, an apparatus might be adjusted so as to compare the path of the motion with any line, and thus prove, beyond a doubt, whether this is the identical method that was used by the Grecians or not.

It is strange, that man should know the motions in the heavens and not know this!

Professor Donaldson may perhaps remember that I measured a cast of a volute in his possession many years ago. The paper with *sixteen* radiated openings, on which the centre was marked, was applied to the centre of the eye of the volute, and then *seventeen* points in one revolution were obtained. This paper has been long lost, but I still have a slip of paper, on the edge of which, at the time, I formed a scale of the radii, and which indi-

cated an error in one of the marks first made on the radiated paper; and that was then proved to be an error, by placing the paper again on the cast, and then correcting it. The measures on this scale, some time ago, I transferred from a centre to sixteen radiating lines; and, on turning over some papers and seeing it, I considered that, without going to the "British Museum," I could make *one* comparison. I therefore placed the "pentagraph weight" in the centre, and adjusted my temporary apparatus to it; and it has thus become the *first*, and a most powerful, evidence of the great probability that this is the identical method used by the ancient Greeks. Indeed, nothing but the most inveterate prejudice could blind the eyes of any person who would give the least attention to the subject.

The particular adjustments of the apparatus also clearly indicate that the ancient architects worked by rule: the adjustments for the apparatus in this case being, in their proportions to each other, as 2, 6, and 12,—each being a little more than so many English inches.

The application of forms produced by varying motion was not "problematical" to the "ancient Greeks," whatever it may appear to be to Mr. Cockerell,—who by such imaginations, has perhaps contributed to prevent such simple facts being known.

The spiral lines now produced have in their general character, when compared by scales of radii, a similar appearance to the variation in the lines which I had previously supposed, from that circumstance, and from the equal simplicity of motion, to have been the Greek spiral; although no one, to my knowledge, has attempted to disprove the correctness of such a supposition, and it may yet be found to be a variety, but in this instance it must give way to this *new* (*doubtless very old*) character of motion; and the variation of adjustments which this motion admits of, furnishes such strong presumptive evidence that it has been the *origin* of *all scrollwork;* and this will not appear the less obvious when it is known and seen, that by the most simple variation in the adjustment, every variety of "*inflected* lines," —"*lines of beauty*" for connecting the two scrolls at the ends of a map,—whether equal or unequal,—can be obtained.

I had ascertained how to produce these "*lines of beauty*" about a year ago, although I had not an apparatus to draw one complete on this principle. I should be ashamed of saying this, if this simple principle of motion had not also escaped the observation of, as far as I know, all others, even mathematicians.

Professor Willis has not included it in his attempt at classification of motions. Nothing is more easy than to build up complicated apparatus, or to hide, to common observers, imperfections in form, by colour and ornament; while experience daily proves that the most simple principles, which, when known, require no demonstration to make them obvious, have not been so easily discovered.

Upon the whole, I am not sorry that the present race of architects, and especially the professors, have looked upon my endeavours with so much prejudice and indifference—perhaps I may say absolute contempt—although they have been incapable of offering anything as a substitute.

Had it been otherwise, and had they given just so much attention to my discoveries, as to understand the subject, they might then, before me, have discovered some of the most important and interesting adjustments in the septenary system, which I had hitherto passed over. This, however, they have not done, and Mr. Cockerell may long look at the object in the wall—"*a fossil of beautiful spiral outline,*"—before he discovers a simple practical method equal to "*those refinements which marked the smallest productions of the Grecian chisel, testimonies of the science of the Greek architects,*" for producing true lines in the actual execution of a volute, with the facility the apparatus now before me is capable of. To incur the cost, however trifling, of getting an apparatus made to work very accurately, would be a risk that the invention would be at once copied; and it would be the same if even the temporary apparatus was applied, for additional proof, to a volute in the British Museum.

All, therefore, that I can do is to draw a few lines, and to exhibit an example of a volute, drawn with the temporary apparatus, at the Polytechnic Institution, and invite architects to look at them, and to invite all to ask architects the question,—whether they can produce as correct a specimen by simple continuous varying motion, either for volutes or entasis, and what they really know of the septenary system?

JOSEPH JOPLING.

NOTES IN THE PROVINCES.

THE Fitzwilliam Museum at Cambridge is now open to all respectably-attired persons on Wednesdays and Saturdays, from twelve till four o'clock.——A new chapel has been opened at Prickwillow, Ely. It is built on a site near the bridge on the Dark river, and is of flint, with stone and brick dressings and slate roof. ——The restoration and repair of the chancel of the old church at Soham have commenced, on plans by Messrs. Bonomi and Cory, of Durham. Carved oak stalls will run round the two sides; the floor will be relaid with encaustic tiles. The repewing of the whole body of the church is thought desirable.—— The repairs and restoration of Melton Mowbray Church by the contractors, Messrs. Broadbent and Hawley, of Leicester, are in progress. The large window on the west side of the church is to be repaired, it is said, and replaced with new stained glass.——A tomb of Caen stone, representing a railway arch or tunnel, surmounted by embattled towers or lanterns, has been built in the parish church of Otley, in memory of the thirty-four unfortunate workmen killed at the Bramhope tunnel during the progress of the Leeds and Thirsk Railway works.——The harbour of Lowestoft has now cost 177,385*l.*, and when completed will cost about 200,000*l.* It is capable of containing 200 vessels, independently of the outer basin. At its entrance at low water there is a depth of 19 feet 6 inches. The dues for last year amounted to 3,954*l.*, and the present are 60*l.* per week higher than the average of the past year.——The Bristol council have commenced rebuilding the landing-pier of Portishead; Messrs. Charles Emett and John Gay, contractors: plans by Mr. Joseph D. Green, engineer to the Bristol Docks, under whose direction the works are now in progress. ——The Albion Chapel, Southampton, was opened on Wednesday week. It is 80 feet in length, 50 feet in width, and 32 feet 6 inches in height from floor to ceiling. The entire cost is between 5,000*l.* and 6,000*l.* Mr. W. Hinves, of Southampton, was the architect, and Mr. T. A. Gates the builder: plasterer, Mr. C. Scorey. The building is described as "a structure in the Ionic order of classic architecture." The front is of white brick, with columns, &c., faced in Portland cement. A flight of stone steps ranges the entire length of the front, and the whole is inclosed by an iron railing from the street. ——The Brighton Commissioners, with reference to the projected sale of the Pavilion, &c., have passed a resolution that it would be highly injurious to the town of Brighton to suffer the lawn and pleasure-grounds to be built over. —— The first stone of a church, to be built at Wickham Bishops, was laid on Friday in last week. It is in the perpendicular style: cost, when finished, about 3,800*l.* The church is the gift of a lady,—Mrs. Lee, of Wickham Bishops, Essex. Mr. Christian is the architect.——Fifty acres of Wimbledon Common, it is said, are to be enclosed, and an establishment for pauper children, from the Surrey Union, erected there.——St. Peter's Church, Canterbury, according to the *Dover Chronicle*, is about to be placed under a process of restoration, which it much requires. The plaster covering the flint is being cleared off, and the work fresh pointed.——The Rochester-bridge wardens have resolved on the erection of a new bridge forthwith. The plan is not yet determined.——A temporary church, in the form of a spacious tent, to hold between two and three hundred persons, has been erected in Datchet-lane, Windsor, under the Castle walls, for the families of labourers engaged in forming the branch railway to the Great Western, at Slough, and the continuation of the Richmond line from Datchet.—— The Macclesfield baths and washhouses for the working classes have been formally opened. ——On Monday week the Bishop of Manchester laid the first stone of Christ Church, Friezland, near Ashton. The edifice is to be in the early English style, from a design by Mr. G. Shaw, of Upper Mill, Saddleworth, to accommodate 500 persons, and to consist of a chancel, nave, and north aisle, a tower and spire, and a south porch, the vane of the spire to rise 180 feet from the base course. A school has been already erected in the same style, and there is to be a parsonage and a house for the schoolmaster, also in the same style: estimated cost, schools, 1,000*l.*; church, 3,000*l.*; parsonage, 1,500*l.*; master's house, 300*l.* The whole are to be built of irregular coursed parpoints, and ashlar coigns. The contractor is Mr. Wade, contractor for part of the Huddersfield Railway.——The Doncaster New Market, erected by the corporation, was recently opened. It is a long, wide building, in the shape of the letter L, placed on the site of the old Town Hall, in the centre of the Magdalens. There are eight public entrances into it. Round the inside are fifty-five shops, and up the centre at one end thirty-nine stalls: the other end is used as a butter and poultry market. The whole is already let, and at present rents, upwards of 500*l.* annually will be realized.——Eldon Church, to be consecrated on 16th inst., will accommodate 800 persons. The font is of Roche Abbey stone, and the pulpit is moulded. A tower is much wanted, and the unfinished state of a street close by is an eyesore in the view of the whole.——Messrs. Wilson and Gibson, the contractors for the southern approaches of the High Level Bridge, at Newcastle, and for the new Durham Infirmary, and other buildings, have got the contract for the erection of the new Public Hall in the city of Durham, under Mr. Hardwick, architect. —— Some workmen having been employed in taking down a portion of the screen in front of the Register-house, at Edinburgh, preparatory to the erection of the equestrian statue of the Duke of Wellington, an interdict was immediately obtained, on its being learnt that the Government had no intention to allow the whole screen to be thrown back as desired by the citizens.——The Marchioness of Waterford is building, at her own cost, a new church at Guilcoh, in the diocese of Waterford. The first stone has lately been laid. The inscription on it is,—"To the Glory of God. Laid May, 1849, by George Wilson, aged 106 years; erected by Louisa, Marchioness of Waterford."——On Tuesday, June the 5th, the chapel lately built in the hamlet of Frieth, in the parish of Hambleden, Bucks, was, with its burial-ground, consecrated by the Lord Bishop of Oxford. It is dedicated to St. John the Evangelist, and contains seats for 150 persons. Mr. J. P. Harrison is the architect. At the east and west ends are memorial windows of stained glass: the west window, in memory of the Rev. H. C. Ridley, is the work of Mr. Hudson, of Pentonville; the east window was executed by Mr. Hardman. The carpet for the chancel is a joint contribution from the labours of several ladies. The chapel is well placed on the slope of a hill, and is built of flint, with Bath and Caen stone dressings. The roof is of deal, the seats of cedar, the lectern of oak, and the altar-fence, pulpit, and prayer-desk of oak and cedar intermixed. The belfry is of oak, filled in with decorated work. The cost of the church and its fittings is about 1,200*l.* Mr. Bond, of Marlow, was the builder.

METALS.—Returns for 1848 show that 3,788 tons of pig and sheet lead were imported into the United Kingdom, together with 1,298 tons of lead ore, and 64 tons of white lead. Export of lead ore, 134 tons, of pig and rolled lead, 4,977 tons, white lead, 1,168 tons, red lead, 842 tons, and pig and sheet lead, 3,747 tons. Copper ore imported, 50,053 tons. Value of copper manufactures imported, 9,200*l.* Copper ore retained for domestic use, 51,307 tons; duty, 10,227*l.* net. British copper exported, 13,466 tons. Zinc or spelter imported, 13,529 tons, duty free. Zinc exported, 562 tons British, and 3,766 tons foreign.

SALISBURY CATHEDRAL.—It is reported in the neighbourhood, that the dean and chapter have it in contemplation to throw Salisbury Cathedral open to the public. We sincerely hope that the report in question is founded in truth.

EXEMPTION OF EDUCATIONAL INSTITUTIONS FROM TAXES.

Observing in your able periodical of last week a paragraph relative to the exemption of literary and educational institutions from the payment of rates, permit me to draw attention to the want of equity, under the present Act, in saddling a particular parish with the entire loss of rate. In a country town, for instance, with some dozen parishes, why should the parish in which a museum or mechanics' institute happens to be located be alone taxed by the loss of a rate on a large property, and the other eleven, which derive equal benefit from the institutions, be exempted?

Could not this injustice be obviated by directing the treasurer of the union to CREDIT the *individual parish* in which an institution might be situated with the amount of rate which would, but for the special exemption, be due to it, and DEBIT *the union account* with the same sum? I believe some such arrangement as that suggested would obviate much of the objection and opposition with which the working of the Act has been impeded.

Of course this is only suggested in the absence of a "national poor rate,"—the only effectual remedy for this and many other more important and equally inequitable anomalies.

T. S. G.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

The annual excursion of this society took place on Saturday, the 16th inst. The locality fixed upon was the village of Gresford, in Denbighshire, famed for its beautiful church and the picturesque scenery in its neighbourhood. The party from Liverpool was joined at Chester by a deputation from the Chester Archæological Society. On their arrival at Gresford they were conducted over the church by the reverend vicar. The church is a fine specimen of late Perpendicular work, the tower being particularly rich in panelling and niched and canopied buttresses, the statues, for the most part, still remaining. After staying a sufficient time at Gresford, to sketch the most interesting portions, and to delineate the details, the party proceeded to Wrexham, and made an inspection of the church there, which is generally considered the pride of North Wales, after which they sat down to an excellent dinner at the Wynnstay Arms Inn. Covers were laid for forty. The chair was occupied by Mr. J. A. Picton, F.S.A., vice-president of the Liverpool Society; the vice-chair was taken by Mr. C. Reed, the secretary, and the meeting was addressed by them, by the Rev. Mr. Massie, rector of St. Mary's, Chester, Mr. John Hicklin, secretary to the Chester Society, and editor of the *Chester Courant*, Mr. R. Alexander, editor of the *Liverpool Mail*, and other gentlemen.

ARCHED TRUSSES OF BENT TIMBER.

I observe in your Saturday's number a report of a description of the construction of a collar roof, with arched trusses of bent timber, at East Horseley Park, read by the Earl of Lovelace.

I have never heard of, or seen Col. Emy's work on Carpentry, but the idea of bending the timber in laminæ occurred to me in the beginning of 1843, when plans were wanted for temporary churches for the clergy that left the Established Church of Scotland, a model of which I had prepared and deposited in the studio of Handyside Ritchie, the sculptor, which was examined and highly approved of by a great many scientific gentlemen in Edinburgh. Since that time I have designed and carried out several churches in the pointed style, with the ribs of the trusses bent, and I have at this moment six churches in hand erecting on the same principle as regards the roof, in different parts of the kingdom. Independent of the beauty of appearance and unquestionable strength gained by such a mode of construction, the great economy is, perhaps, the most striking.

About twelve months ago I was called upon to prepare a design for re-roofing a church in Cheshire, 48 feet wide, built in a sort of bastard Norman style, and I adopted the semi-circle, as more in keeping with the rest of the work, the inner angles of each rib moulded with a notched billet. Another architect prepared a design, consisting of the common tie beam and king post, and both were estimated by the same tradesman; for the former his tender was 420*l.*, for the latter 730*l.*, showing a difference of 310*l.* in favour of this system of construction.

In no case have I had the slightest accident or giving way of the work.

The notice in The Builder is the first intimation of this principle being applied by any one but myself to the purposes of roofing, and in a new edition of Nicholson's Carpenters' Guide, now publishing by Virtue, of Ivy-lane, under my revision, I intend to embody this mode of roofing in the work, illustrated by drawings and details.

Liverpool. JOHN HAY.

NINEVEH.

SYRO-EGYPTIAN SOCIETY.

At a meeting of this society, on the 12th, Mr. Ainsworth, the secretary, read a communication "on the topography of Nineveh." After pointing out the received distinctions of Assyria proper and of the Assyrian empire, the writer proceeded to argue, that whichever of the disputed versions of Genesis x., 11, is adopted, it still remains certain that there was an Assur, or Athur, existing before the foundation of Nineveh. That the Arabian geographers Yakut, Abulfeda, and Ibn Said describe the ruins as the modern Nimrud, as those of the said Asshur, or Athur (sometimes Akur, with a *kaf*). That Mr. Rich, in his "Kurdistan" (vol. ii., p. 129), the Rev. N. Morren, in art. Assyria ("Cyclop. of Bib."), and Dr. Layard, in his "Nineveh, &c.," vol. ii. p. 245, admit that all well-informed natives designate Nimrud as Al Asshur, or Athur. That the name which occurs in the inscriptions found in the north-west edifice at Nimrud has been read by Major Rawlinson as that of the Asshur of Genesis, and that Dr. Hincks has also published his conviction that the first word of the inscription is either the name, or an abbreviation of the name of Athur; but the Doctor also adds, which is a *non sequitur*, that the same name stands for the city, of which the historical name is Nineveh.

That Dr. Layard's archæological investigations have already shown that the builder of the central palace—the second in succession of time—at Nimrud, also erected edifices, if he did not found the sites of what are now called 'Ba'asheikha and Kaláh Skirgat; that Dr. Layard also admits that the more modern Assyrian ruins at Koyunjuk, Khorsabad, and Karamles, represent the Nineveh of the Books of Jonah and Nahum, and of profane history and of travellers. But Dr. Layard also comprises within the same denomination, a palace of the same age that was erected upon the ruins of Asshur.

Mr. Ainsworth showed, upon a map of Assyria on a large scale, which he had drawn up, that no arbitrary grouping of the Assyrian ruins would be satisfactory at the present moment, and that in the present state of the inquiry there are no other data than that Nimrod or Ninus, or his or their successors, erected and continued to erect edifices at Athur, one of the oldest cities of Assyria proper, and that the second dynasty also erected edifices at the same spot after its fall and the rise of the historical Nineveh, to identify the one with the other; but that the greater number of probabilities, at least topographically speaking, are that the two sites were always distinct, and that Athur or Nimrúd was a separate site from the abode of Ninus, as well as from the historical Nineveh.

St. Mary's Church, Ware, will be reopened for service on Thursday, July 5, and a sermon will be preached to aid the restoration fund, by the Rev. Henry Melvill. The restorations here, which commenced with the outside, have been carried out very extensively inside, through the zeal of the vicar and parish officers and the liberality of the inhabitants. Although personally concerned, we shall be tempted to give hereafter some little description of the alterations effected.

Books.

The Architectural Scrap Book, containing sketches of parts of buildings, English and Continental. By J. Butler and H. Hodge, architects, Beaufort-buildings.

The north aisle of Hallaton Church; Churchyard Cross, Houghton; Turrets from Boulogne and Oxford, and two Elizabethan doorways, constitute No. 3 of this work, and in No. 4 are brick chimneys, at Assington and Terling, an oriel window from Colmar, France; and two wooden porches, from Trowlesworth Church, Leicestershire, and Heston Church, Middlesex. The last number is an improvement on those which precede. The oriel window from Colmar, belonging to the seventeenth century, is a curious renaissance version of the angle turrets to dwellings of the mediæval period abroad. "The plan of the window is a parallelogram, placed on the angle-house of a street, offering facilities for seeing up and down four streets; it looks remarkably picturesque and rich."

Touching our remark on a previous occasion that "the idea of the 'Architectural Scrap Book' would almost seem to have been taken from the announced intention of the Architectural Publication Society," the authors have written us to say that "whatever might be inferred from appearances, the prospectus of the work was written and printed many months before they were aware of the Publication Society's existence, and that they have too much respect for the praiseworthy efforts of the society to interfere with their work or intentions."

Antiquarian Gleanings in the North of England. Drawn and Etched by W. B. Scott, of the Newcastle School of Design. No. I. Bell, Fleet-street.

This is the commencement of a laudable attempt by Mr. Scott to preserve records of the moveable antiquities of "the Nor-Humbrian province." It includes the carved reading-desk in Jarrow Church, various cinque-cento cups, a carved chimney-piece in the Guild-hall, Newcastle, chairs, and wall paintings.

The History of Ireland, from the earliest period of the Irish Annals to the present Time. By Thomas Wright, M.A., &c. London: Tallis. Nos. to 12.

Mr. Wright is advancing with his history, the last number (12) bringing us to the year 1601. It seems to be carefully written, and is well calculated to supply an existing deficiency.

Miscellanea.

John Knox's House at Edinburgh.—The old house in the Netherbow, in which the stern old Calvinist lived and died, is now so dilapidated that the dean of Guild-court has ordered its removal, notwithstanding an endeavour of Mr. R. Chambers and other members of the Scottish Society of Antiquaries to prevent it. Some time ago it was proposed to erect on this spot a monument to the memory of Knox, to consist of a tower and two churches. It is to be hoped that nothing worthy of preservation in this ancient edifice will be destroyed.

A Forthcoming Panorama.—Mr. Henry Warren, Mr. Haghe, Mr. Bonomi, and other good men and true, are engaged on a panorama of the Nile, of very considerable extent, and will soon bring their labours to a close. The novelty of the subject, and the goodness of the authorities consulted, can scarcely fail to obtain for it a large amount of popularity, if the idea be carried out as efficiently as the names above-mentioned give us reason to believe it will be.

A New Street Waterer has been patented by Mr. Salter, of Birkenhead. The tank is of cast-iron, mounted on cart wheels, which in rotating work a force pump, projecting the water into an air chamber, and thence in a steady stream into pierced pipes as usual. A breadth of 30 feet, or only one-half, can thus be effectually watered, or the force pump thrown altogether out of gear, by treadles at the driver's feet and handles at his side. The cost of the forcing apparatus is 15 guineas, and of the whole 45 guineas. The machine, it is said, can do the work of three ordinary water carts.

PROJECTED WORKS.—Advertisements have been issued for tenders, by 30th inst., for building a covered corn-exchange at Bedford; by July 2nd, for the erection of a bank at Darlington; by 4th, for the erection of schools at Margate; by 10th, for the erection of town-hall, county court, and mechanics' institute, at Stonehouse, Devonport; by 11th, for the erection of a pensioners' establishment at Regent's-park barracks; by 10th, for the erection of the Welsh Educational Institute, at Llandovery; by 29th inst., for the erection of a vicarage and offices at Bardsey; by 27th, for the erection of extensive farm buildings at Kirtling, Cambridgeshire; by 3rd July, for cutting trenches for water mains near Manchester; by 28th inst., for the whole or any portion of the works in erection of a north wing and additions to Manchester Royal Infirmary; by 3rd July, for the erection and completion of a warehouse at the Huddersfield Station of the Lancashire and Yorkshire Railway; by 3rd, for constructing a sluice at Outwell and for excavating the canal from Wisbech to Outwell; by 6th, for relaying carriage way in High-street and Spital-square, and other works: by 26th inst., for building sewers in Little Moorfields, &c., City; by 25th, for the construction of an outlet sewer at Toxteth-park, Liverpool; by 27th, for making roads and footpaths in Walthamstow parish; and by a date not specified for improving turnpike roads at Worcester.

COMPETITIONS.—Advertisements have been issued for plans, &c., of a church for Cheltenham; and for workhouse accommodation at Chelsea: particulars as advertised.

SOCIETY OF ARTS.—On Thursday in last week, the annual distribution of prizes took place, H. R. H. Prince Albert, the president, in the chair. In his speech, the prince stated that he had been induced this year to offer two medals on his own account, to be competed for on two subjects, very different in themselves, but appearing to ask for competition, and to be particularly eligible as subjects to which public attention should be drawn. The first was for making a good cement to bind glass together. The substitution of glass for metals was a matter of great importance as regarded cleanliness, and consequently the promotion of the public health, and that had been prevented to a great extent by the want of a cement that would hold. All connected with the manufacture of glass well knew that slipperiness of surface was a great cause of the difficulty experienced. But the subject of the next medal was one of national importance, and was intended to promote an improved system in the production of sugar. His Royal Highness then entered more fully into this question, which is out of our province. He expressed his satisfaction to see in the Colonial Secretary's presence a proof of the importance attached by the Government to this subject. The latter medal was awarded to Dr. Mitchell, but the former was not conferred on any one. The report read by the secretary stated that the revenue had increased during the past year from 800*l.* to 1,600*l.* per annum, and that the society had applied to the Board of Trade and the Woods and Forests for a space of ground for exhibitions of manufactures, the first of which it was proposed to hold in 1851. The prizes were then distributed, and the meeting was addressed by the Bishop of Norwich, Chevalier Bunsen, Sir E. Codrington, and others, and a vote of thanks accorded to the president.

THE PARISIAN PORTABLE ALARUM.—A cheap portable alarum has been submitted to us by Mr. Adams, and seems worthy the attention of those who require occasionally to rise early. The all-important point in an alarum is, of course, that it should go off at the *desired moment*; and if all comply with this condition as well as the specimen now in our hands does, buyers will have no reason to complain.

THE PARIS EXHIBITION OF THE WORKS OF LIVING ARTISTS was opened on the 15th, at the Tuileries. As might almost be expected, it is not of high character.

MURAL PAINTINGS AT ST. CROSS.—Mr. Baigent wishes us to state that the report that he was stopped in his efforts to obtain complete sketches of these paintings is not correct, as "nothing was done to the walls until several days afterwards."

BREACH OF CONTRACT IN THE IRON TRADE.—A case was recently tried in the Court of Exchequer, in which Baron Parke held that a firm-offer, authorising a party to sell at a stated price "till" a specified date, included the date so specified, till the evening of that day. But such an offer, he held, was not a binding contract till the bought and sold notes were communicated, and in this case that was not done till the day following. Evidence of this being the usage of the trade he did not think satisfactory, as offered in this case. A majority of the jury, however, held it to be so. But the Baron started another difficulty. The contract he was of opinion was revocable, and in this case it was revoked by the defendant in due time, namely, on the last date specified in the offer, on its acceptance by the plaintiff. His lordship, therefore, directed a nonsuit in the claim of 187*l.* 10s. paid to another party on 300 tons of bar iron, on a rise in price from 5*l.* 7s. 6d. to 6*l.*,—with leave, however, to move to enter a verdict for the sum claimed. Eventually, to prevent further litigation, a juror was withdrawn, and the judge asked to decide whether the plaintiff were entitled to recover any, and if any, what sum. His lordship approved of this on account of various legal difficulties in the way, and awarded half the sum claimed.

BATHS AND WASHHOUSES. — TIMELY ADVICE.—A foreign visiter to some of our public baths, the Baron de Suarce, while honouring the English of all classes for the establishment of such noble institutions, advises the exercise of great and even scientific care in the cleansing of towels and flannels, particularly in such a season as the present, and, above all, in the metropolis, "whither crowd strangers from every quarter of the globe, many of them from countries deplorably unhealthy, and where disease has an increased malignity." It is not sufficient, as the Baron urges, that the towels be boiled in alkaline water—the ordinary mode of cleansing,—for thus "the corrupt humours of the diseased *may* be enfixed in them. That," he adds, "is what your medical men, agreeing with me, will tell you, and particularly your manufacturers in wool and cotton. At Leeds, and in the west of England, the operation of cleansing the wool is known to require a wash possessing *a certain precise amount and no more of alkali and heat*, as the slightest deviation irremoveably *fixes the oil* in the texture, *instead of separating the two.*"

IMPROVEMENT AT PRINCES-STREET GARDENS, EDINBURGH.—Arrangements are in progress between the Government and the Edinburgh Town Council for a grant of ground on the mound, Princes-street, for the purpose of erecting buildings for the annual exhibitions of the Royal Scottish Academy, the extension of the Schools of Design, and the institution of a National Gallery of Painting and Sculpture. A design by the city architect, Mr. Cousin, has also been favourably considered by the council for the appropriation of a sum of money paid by the Edinburgh and Glasgow Railway Company, in the adornment and public opening of the gardens across which the mound runs. The scheme includes a terrace 95 feet wide along the eastern division, with the Scott monument in the centre, on the side next Princes-street, and a range of statues on pedestals. The plans, which comprise further improvements, are to be submitted for suggestion to other architects or artists.

RAILWAY JOTTINGS.—Contracts have been entered into at Glasgow, for the construction of part of the Nithsdale line between Sanquhar and Cumnock, a distance of 14 miles. Mr. Ritson is contractor for one-half the distance, and Messrs. Jeffs for one-fourth. The works are not heavy, and as the labour is cheap, they have been taken at 66,100*l.*, to be completed in eighteen months. At the Drumlanrig tunnel there is now a drift through the whole excavation.——Another fatal accident has occurred at the Bramhope tunnel, where a stone from a blast in one shaft entered another 210 feet apart, and killed one of the workmen.——Large sales of rails, to the extent of some 13,000 tons, are rumoured to have been charged to the York and Berwick Company, at 3*l.* or more per ton than they cost. It is said that a large iron house will undergo close examination on this point.——The railway clocks on the Great Northern and other principal lines in France are now regulated by electricity, the mean time emanating from one regulating clock on the Great Northern. —— In Massachusetts there are 37 railway companies, with a capital stock of 50,004,100 dollars. The length of road is 954 miles, besides 88 of branches, cost 46,777,009 dollars. The earnings for last year were 6,067,154 dollars, working expenses 3,284,933 dollars. Only 220 miles are of double track. Mean speed of passenger-trains about 23⅛—of luggage-trains about 12⅛ miles. Return of casualties,—56 persons killed, and 65 injured. During the year 300 miles of new road have been put in operation on the lines leading to Boston. The total mileage in the United States being 6,421, nearly one-sixth is in Massachusetts.

LORD ROSSE'S LAST SOIREE.—At the fourth and last *conversazione* given by Lord Rosse to the Fellows of the Royal Society on the 16th inst., there was a considerable attendance of men eminent in art, science, and literature. Amongst the matters exhibited which more particularly bore on our speciality was an extraordinary model of the Go Prum, or great gate of the Pagoda at Cimbaconum, near Tanjore, in the East Indies. This singular work is of pyramidal form above the gateway, in twelve stories, and displays about 300 carved figures. Mr. Perigal exhibited his instrument to develop a peculiar law of compound motion generating "retrogressive" curves, which has been seen before at similar meetings; and Mr. Scriven exhibited a model of the Ainslie Tile Economic Kilns, wherein the heat, generated in one kiln, and having there done its work, is made to pass into another, and advance the ware a certain stage. There were some pretty specimens of the vitrified lace-pattern glass, and an admirable collection of photographs by Messrs. Henneman and Co., of Regent-street, and Mr. John Woolley, an amateur. The architects mustered strongly, and the builders were not unrepresented.

VULCANIZED INDIA-RUBBER JOINTS.—In reply to inquiries, we have had no personal experience in the durability of Mr. Brockedon's vulcanized joints. There are reports, however, on the subject by Mr. Wicksteed and Mr. A. Aikin, which are strongly in their favour. Caoutchouc is vulcanized by combination with a certain small proportion of sulphur.

SOCIETY OF ARTS; LABOURERS' COTTAGES.—We have received several letters, complaining, in strong terms, of the non-adjudgment of the premium offered by the society for the best design for labourers' cottages. The society assert that the condition as to cost (100*l.* for each five-roomed cottage) was not adhered to.

A WORD IN SEASON.—Never be cast down by trifles. If a spider break his thread twenty times, twenty times will he mend it again. Make up your minds to do a thing in compass, and you will do it. Fear not if trouble comes upon you; keep up your spirits, though the day be a dark one.

Troubles never stop for ever,
The darkest day will pass away.

Fight hard against a hasty temper. If anger come, resist it stoutly. A spark may set a house on fire. A fit of passion may give you cause to mourn all the days of your life. Whatever you do, do it willingly. A boy that is whipped to school never learns his lesson well. A man that is compelled to work, cares not how badly it is performed. He that pulls off his coat cheerfully, strips up his sleeves in earnest, and sings while he works, is the man for us.

A cheerful spirit gets on quick;
A grumbler in the mud will stick.

BUILDINGS AND MONUMENTS,
EDITED BY GEORGE GODWIN, F.R.S., &c.

Part II., containing views of the Army and Navy Club House, Pall Mall; St. Stephen's Church and Schools, Westminster; Interior of the Museum of Economic Geology, with details; Chapter House of Lincoln Cathedral; New Hall, Pembroke College, Oxford; South Hackney Church; Interior of the Royal Italian Opera House, and University Galleries and Taylor Institute, Oxford, will be published on Saturday next.

TENDERS

Received by the Society for the Improvement of the Labouring Classes for building the New Model Lodging House for families in George-street, Bloomsbury; Mr. Roberts, honorary architect. The estimates provide for two modes of constructing the floors and roof; that consisting of hollow tile arches is to be the method adopted. The quantities were supplied.

	General estimate exclusive of floors and roof.	Floors and roofs constructed in the usual manner.	Floors and roof constructed with hollow tile arches.
Mansfield	£7,650	£1,365	£1,526
W. Cubitt and Co.	7,484	1,260	1,497
G. Bird	6,644	1,222	1,362
Hicks	6,645	1,217	1,319
T. Piper and Co...	6,457	1,218	1,246
Hayward and Co..	6,262	1,120	1,180
Grimsdell	6,268	1,043	1,148
Holland (accepted)	6,148	1,180	1,222

TO CORRESPONDENTS.

"*Smoky Bricks.*"—"G." (Canterbury), will find some advice on preventing stains from old smoked bricks, in our fourth volume, p. 405 (September 26th, 1846).

"*Building Materials in Paris.*"—Conclusion next week.

Received.—"G. D.," "A Competitor," "J. B." (Spring Gardens); "Mr. R.," "A. B.," "Old Subscriber," (Norwich: many thanks for kind words, always grateful and stimulating); "J. J. C." (ditto); "A Competitor" (the prize is withheld); "Architect in Embryo," "B. and B." (accidentally delayed. Were there other tenders? Can you explain cost); "W. W." (we have not space); "W. J.," "H. M'C." (note shall be forwarded); "J. T.," "R. J. M.," "A. B. S." (we hope to use it); "O. G.," "Expositor," "J. K.," "G. J. R.," "J. L.," "J. H. L.," "W. M.," "A. B. S.," "A Subscriber," "J. Q.," not arrived); "Messrs. W.," Mr. L." (declined): "J. F. (Ipswich); "E. S.," "Double Trapping," "G. G. (Saffron Walden); "J. W." (the subjects sent scarcely warrant engraving, but make us wish to see the other sketches); "Hints on Public Architecture." By Robt. Dale Owen, Chairman of Smithsonian Institution. (Putnam: New York, and Strand, London, 1849.) "A Hand-book for London, Past and Present." By P. Cunningham. 2 vols. London: (John Murray, 1849.) "Observations on the British Museum, National Gallery, and National Record-office, with suggestions for their improvement." By Jas. Fergusson, M.R.I.B.A. (Weale, Holborn, 1849.)

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The Rt. Hon. the Earl of CARLISLE in the Chair.

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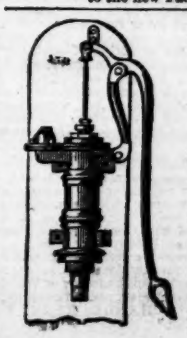
TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, Kept for Hire.

BENJ. FOWLER (late of 63, Dorset-street), removed to the new Factory, Whitefriars-street, Fleet-street.



TO BUILDERS AND PLUMBERS.

THE attention of the Trade is called to
JOHN WARNER & SONS' PATENT VIBRATING STANDARD PUMP,

which is recommended for the simplicity of its construction, and the ease with which it works.

By the introduction of the vibrating standard the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 26 feet; also, Garden Engines constructed on the same principle.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London,
Manufacturers and Patentees.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

A REDUCTION in the PRICE of FLOOR BOARDS.—ALFRED ROSLING begs to inform the Trade and Consumers generally, that he has REDUCED the PRICE, and keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

GREAT REDUCTION IN THE PRICE OF FLOOR BOARDS AND MATCH BOARDING.—THOMAS ADAMS (late S. Dare), Mahogany and Timber Merchant, Bermondsey New-road, Southwark, near the Bricklayers' Arms, begs to inform his friends and the trade generally, that he has in stock a large assortment of the above goods, fit for immediate use, at prices which only require a trial to prove their decided cheapness. Also mouldings prepared by machinery from the very best material, and in a superior manner; cut deals and scantling of every dimension; mahogany, cedar, rosewood, walnscot, elm, beech, oak, &c. in planks, boards, veneers, and logs; pantile, oak, and fir laths; wheelwrights' goods. All sawn and prepared goods (except timber) delivered free of expense; sawing charged at mill prices. Very extensive drying sheds.

JOHN NEWSON'S Machinery being now perfectly completed, he is enabled to offer to Builders and others the BEST DRY FLOOR BOARDS at the following reduced prices:—

¼ white S	15s.	per 100 feet superficial.
1 inch ditto	18s.	" "
1 inch white D	22s.	" "
1 inch yellow	24s.	" "
Two-cut battens white or yellow	21s.	" "

All sorts of sawing done for the trade, and room to stack and dry upwards of 20,000 deals and battens. Barges always going to and from the principal docks. Goods can be insured in the Builders Fire Office, 69, Lombard-street, or at Mr. Newson's Office, 50½ Westbourne-street, also at his Timber Yard, Grosvenor-row Pimlico.

GENERAL WOOD-CUTTING COM- PANY.—SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, between the Suspension and Waterloo Bridges. SAWING and PLANING in all their branches executed with the greatest despatch and punctuality. A large Stock of seasoned and beautifully WORKED MOULDINGS, consisting of upwards of 100 different patterns kept constantly on hand; also an extensive assortment of dry prepared FLOORING BOARDS, of all qualities and at reasonable rates.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

PHILLIPS, ALLCARD, and CO.'S IMPERIAL DEAL SAW-MILLS, WENLOCK-ROAD CITY-ROAD, beg to invite the attention of builders, carpenters and the trade, to their well selected stock, consisting of a large assortment of TIMBER, DEALS, PLANKS, and BATTENS, of every description, and thoroughly seasoned. They also have constantly on hand, and ready for immediate use, white and yellow prepared FLOORING BOARDS of all thicknesses, and matched lining, cut and planed to a parallel breadth and thickness. And they are enabled to offer all their goods at very moderate prices

TIMBER PRESERVING COMPANY.— (PAYNE'S PATENTS).—The Directors beg to draw the attention of engineers, architects, contractors, and builders, to their method of preparing timber against rot, fire, and the ravages of worms, &c. Every information as to stations, charges, &c., can be obtained at their chief office, Whitehall-wharf, Cannon-row, Westminster, and at their several stations in the country.

DESICCATED WOOD.—DAVISON and SYMINGTON'S PATENT.—Builders, Cabinet-makers, and others, will find it much to their advantage to patronise this new process of seasoning. The greenest wood can thus not only be seasoned in an incredibly short space of time, at a small cost, but is rendered stronger, entirely free from shrinkage, and in every respect better than wood treated in the ordinary way; thereby saving capital, interest of money, insurance, and all the other inconveniences attending the keeping of a large stock.

The DESICCATING SAWING and PLANING MILLS are situated at PLOUGH BRIDGE, ROTHERHITHE, adjoining the Commercial and East Country Docks, from whence parties obtaining their material can have the same converted as required, and sent home fit for immediate use.—T. GIRLING, Manager.

For licenses to use the patent, scale of prices, or other information, address, ANGUS JENNINGS, Secretary, Patent Desiccating Company, 41, Gracechurch-street, City.

TO ARCHITECTS, BUILDERS, UPHOLSTERERS, AND OTHERS.

WOOD CARVING done in the cheapest and best manner. Estimates given to any amount. Pulpits, reading-desks, altar-rails, stalls, and other church fittings supplied complete. Old carvings restored by J. STALON, Wood Carver and Manufacturer, 42, Berwick-street, Soho, London.

JORDAN'S PATENT MACHINE CARVING and MOULDING WORKS for WOOD and STONE, Belvedere-road, Lambeth, and 154, Strand.—TAYLOR, WILLIAMS, and JORDAN beg to call the attention of the building community to a new feature of their establishment, and, at the same time, to thank their numerous patrons and friends for the very liberal support they have lately experienced, which, they assure them and the public, it will be their constant endeavour to deserve, by giving their customers an increasing share of the advantages arising from the constant improvements in the machinery which they have just succeeded in applying to the production of the most intricate carving in Caen and other freestones, and in statuary marble.

T., W., and J. particularly solicit the attention of architects and builders to the fact that, by the use of this machinery, a very large saving, both of time and money, is effected,—so great, indeed, that in many cases they can deliver a well-finished article in Caen stone for less money than it can be obtained in cement, while their wood-carving will, in some cases, be found to come into close competition with the best kinds of composition ornament.—For prices and estimates apply at 154, Strand.

TESTIMONIAL FROM CHARLES BARRY, ESQ.

"Westminster, May 16th, 1848.

"Gentlemen,—In reply to your letter requesting my opinion of your Patent Carving Machinery, I have much pleasure in stating, from an experience of more than two years, in its application to the production of the wood carvings of the House of Peers, and other apartments of the New Palace, at Westminster, that I am enabled to make the most favourable report concerning it, and to add that it has more than justified the favourable terms in which I recommended it in 1845 to her Majesty's Commissioners of Woods and Works for adoption.—I remain, Gentlemen, yours faithfully,

"CHARLES BARRY."

"Messrs. Taylor, Williams, and Jordan."

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to inform ARCHITECTS and the PUBLIC that he has availed himself of improvements in his MACHINERY, by means of which he is enabled to produce GOTHIC WINDOWS MOULDINGS, PANNELS, &c. &c., at a very cheap rate, out of a superior stone from the west of England, as durable as any soft stone, and particularly sound.

S. C. has an economical method of dressing the above stone over, which produces, by the action of the atmosphere, a surface of crystalline hardness, and improves the colour.

FONTS from 5l. upwards. Specimens on view of the various styles.

First-rate ARTISTS retained for SCULPTURED and CARVED Works.

Vein Marble Chimney-pieces, of the best quality of material and workmanship, by improved machinery	40s.
Stone ditto, from	8s.

A variety on view in stock.

MEMORIAL CROSSES, MONUMENTS, TOMBS, HEADSTONES, &c., in great variety of design.

RESTORATION of CHURCHES. SAMUEL CUNDY having had much practice in this branch, is desirous of Estimating for Restorations.

CLERKS of WORKS have their particular attention called to the above establishment. Coats of Arms, Decorated Pannels, and other enriched works, promptly executed.

Every description of Stone or Granite work prepared, ready for fixing.—Delivered at the various Railways, and carefully packed in trucks. -Pimlico Marble and Stone Works, Belgrave Wharf, Pimlico.

CARLISLE MARBLE WORKS.—The above works have been established nearly Twenty Years, and have lately been fitted up in a superior manner, with all the latest improvements for working and polishing Marble by machinery. Architects and Builders requiring large orders executed will find a great saving, both in cost and time, by intrusting their orders to this establishment. Experienced workmen sent to any part of the kingdom to fix work at a reasonable rate.

THOMAS and JAMES NELSON, Proprietors.

MARKET WHARF, REGENT'S-PARK BASIN.—Messrs. MARTIN and WOOD (late Scoles and Martin) solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c., sold at the lowest possible prices for Cash. Portland Headstones, Ledgers, Steps, Landings, &c., cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c., always on hand. Mortar, Lime and Hair, Fine Stuff, &c.

BATH STONE.—RANDELL and SAUNDERS, QUARRYMEN and STONE MERCHANTS. The most approved kinds of Bath Freestone supplied to all parts of the kingdom. Depôts at the Great Western Railway Stations, PADDINGTON, CORSHAM, BOX, BATH, and BRISTOL.—R. and S. particularly invite the attention of Architects and Builders to their Corsham Down Stone, which is strong and sound in quality, is of beautiful colour and texture, and works much cheaper than any other stone. Prices, with cost of carriage to any locality specified, furnished on application to Randell and Saunders, 14, Orange Grove, Bath.

ROCKHILL PAVING STONE.— Commissioners, Trustees, Surveyors of Pavings, and the Trade generally, are hereby respectfully informed and cautioned, that the ORIGINAL and GENUINE ROCKHILL PAVING STONE is shipped only from the Port of Wick, North Britain; that it can only be supplied on application to the Proprietor, Mr. ADAM, Banker, Wick; or to his Agent, Mr. S. SHARP, Jamaica Coffee-house, Cornhill, London; and that any paving-stone offered for sale under the name of "Rockhill," or "Forss Rockhill Stone," or not shipped and supplied as above, is not genuine, is of inferior quality and strength, and is a deception on the Public.

ANSTONE STONE WHARF, STANGATE.—Mr. GRISSELL has the honour to inform Architects and Builders that he has made arrangements for the SUPPLY of the ANSTONE STONE for all building purposes, and which can now be seen at the above wharf by application to Mr. W. G. WARDLE, of whom every information can be obtained.

N.B. The stone used in the erection of the New Houses of Parliament was supplied EXCLUSIVELY from these quarries.

ANSTON STONE, used for Building the New Houses of Parliament.—W. WRIGHT and Co. beg to inform Architects, Engineers, Builders, and others, the Anston Stone can be supplied in any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. It is very superior for Monuments, Tombs, &c. &c.

W. Wright and Co. have made arrangements to have a stock always on hand at Brine's Marble and Stone Wharf, Horsfall-basin, Malden-lane, King's-cross.—Any further information can be obtained on application to W. WRIGHT and Co., Anston, near Sheffield; or to T. SHARP, their Sole Agent in London, 27, Burton-crescent.

CAEN STONE, from the first Quarries of Allemagne. Depôt at the Whitby and Scotch Wharf, 14, Fore-street, Limehouse.—P. FOUCARD, quai des Abattoirs Caen propriétaire des Carrières à Allemagne), begs leave to inform Builders, Architects, and others, that he has, on the above-mentioned wharf, the best stone ready to meet the demands of purchasers.—Contracts taken for any quantities.—Orders received by Mr. BASCHET, at 39, Stoney-street, Borough Market,—Cargoes shipped to order, from Caen, to any port.

CAEN STONE SPECIALLY SELECTED for EXTERNAL WORKS.—LUARD, BEEDHAM, and Co., extensive Proprietors of CAEN STONE QUARRIES, Allemagne, Calvados Department, beg to solicit inspection of their Caen Stone for external and internal works. They continue their importations of the first quality, carefully selected and marked at the quarries before removal to the place of shipment for export.

L., B., and Co. have on hand a large stock of the best-quarried stone, at their general Depôt, Caen Sufferance Wharf, Rotherhithe; and also at Vauxhall-bridge, Battle-bridge, Kensington and Paddington Basins, where samples and information may be obtained; or at their offices, 18, Southwark-square, Borough; or forwarded by post upon application, without charge or delay.—Shipments made direct from Caen to any part of the United Kingdom.

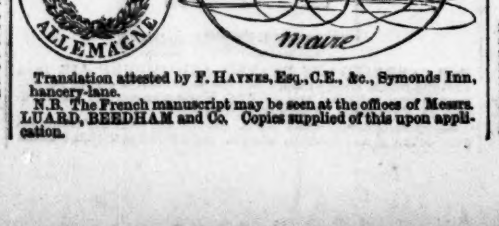
NOTICE to PURCHASERS of CAEN STONE.

Translation of a CERTIFICATE from the Mayor of Allemagne, Department of Calvados, Normandy, relative to the propriety of the Caen Stone Quarries:—

"I, the Mayor of Allemagne, Department of Calvados, undersigned, do hereby certify to all who are interested in it, that it is an error and gross falsehood, as certain persons have reported, 'That the quarries of Allemagne belong to, and are leased from, the Government of France, and the local authorities of the Department of Calvados.' Neither the one or the other have any right or interest whatsoever in the said land or quarries.

"I hereby further certify, that the greater part of these quarries are worked by Messrs. Luard and Company, who are the principal proprietors, and Mons. Jobert, who is also a proprietor; the remainder are worked by smaller quarrymen of the neighbourhood, who sell their produce to certain dealers for exportation to England as it is required.

"Executed at Allemagne, this 29th May, 1849.



Translation attested by F. HAYNES, Esq., C.E., &c., Symonds Inn, hancery-lane.

N.B. The French manuscript may be seen at the offices of Messrs. LUARD, BEEDHAM and Co. Copies supplied of this upon application.

PAVING, 2s. 9d. PER SQUARE YARD, Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE 4, JOHN-STREET, ADELPHI.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

KENTISH RAG-STONE of every de- scription, direct from the quarries, at reduced prices: WHITE SUFFOLK and RED FACING BRICKS of superior quality; COWLEY and KENT BRICKS, from the new clamps just opening.—Apply to Mr. BENJAMIN GOUGH, 37, Newington-crescent, Newington-butts.

BOX FREESTONE QUARRIES.— T. STRONG begs to invite the attention of Architects, Builders, &c., to his extensive STOCK of excellent FREESTONE. His groundstone stands unrivalled for all external purposes, for durability, colour, and texture, as the many mansions which have for centuries past been built of it, fully testify. His scallett stone is of a beautifully fine texture, for interior purposes, and all ornamental work. T. Strong has been making preparations for supplying on the most extensive scale, and thinks a visit to his quarries would well repay the trouble of those requiring freestone, and who would find it a considerable saving to have it direct from the Box Station per Great Western Railway, where a large supply is always kept. Plain and ornamental stonework prepared to order. Ashlar, range work, walling stones, &c., always on sale.

PIMLICO SLATE WORKS.—GREAT REDUCTION in the PRICE of SLATE.—Mr. MAGNUS has the pleasure to publish the following reduced prices for Welsh Slate Slabs of the finest quality, with sawn edges, and planed both faces:—

	Thick. ¾in.	⅞in.	1in.	1¼in.	1½in.	2in.	
	d.	d.	d.	d.	d.	d.	
Under 4 ft. long, or 3 ft. wide	3½	5	6	7	9	12	☐ ft. sup.
Ditto 5 ft. do., or 3 ft. do.	4	5½	7	8	10	14	do.
Ditto 6 ft. do., or 3 ft. do.	4½	6½	8	9	10½	16	do.
Ditto 7 ft. do., or 3 ft. do.	5	7	9	10	11	18	do.

Larger Slabs in proportion.

	Thick. ¾in.	⅞in.	1in.	1¼in.	1½in.	2in.	
	d.	d.	d.	d.	d.	d.	
Cutting to order	1	1	1½	1½	1½	2	☐ ft. sup.

FURTHER REDUCTION IN THE PRICE OF CISTERNS.

Cisterns above 100 gallons, planed both faces, inch thick, grooved and bolted, 1s. only per foot super., or 2s. per foot cube (outside dimensions). Fixing within five miles of the manufactory, 3d. per foot super., or 6d. per foot cube. Enamelled boxed Chimney-pieces, variously marbled, hitherto priced at 40s. to 50s. now reduced to 25s. and 30s. The above prices are all net to the trade.

Mr. Magnus will send his book of Drawings of Chimney-pieces, and printed price-list of ditto, free to any part of the country, on receipt of 3s. in postage stamps (to be deducted from first order received,) and which will be subject to a very liberal discount to the trade.—Address, 39, Upper Belgrave-place, Pimlico.

TERRA-COTTA, or VITRIFIED STONE WORKS, King Edward-street, Westminster-road, London.—M. H. BLANCHARD, from late Coade's Original Works, Belvedere-road, Lambeth, begs to inform the Nobility, Gentry, Architects, and Builders, that he has re-established the manufacture of that invaluable material, which has been successfully adopted by our eminent Architects and others, in the adornment of our noblest buildings, nearly 100 years has proved the imperishable nature of the material, the specimens of those times now exhibiting all their primitive sharpness.

Groups, statues, friezes, capitals, panelling, pinnacles, finials, terminals, Tudor, and other chimney shafts, balustrading, fountains, fonts, tazzas, vases, coats of arms, devises, and every description of architectural ornament, at prices in many instances nearly half the cost of stone.

Specimens of the material to be seen at the Office of "The Builder," 2, York-street, Covent Garden, and at the Works.

TODD'S PATENT PROTOXIDE PAINT, at a very considerable REDUCTION of PRICE.—This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms London.

PAINTING WITHOUT SMELL; a fact accomplished by the use of the newly-discovered SWEET OIL of TURPENTINE, instead of the deadly abomination called oil or spirits of turpentine. Paint mixed with it is free from smell, is improved in brilliancy of colour, and the baneful properties of the lead being neutralized, does not emit those noxious exhalations which have hitherto been so universally associated with painting. By this really valuable discovery house painting is now converted into a sanitary operation, that may be effected at any season of the year, being productive of health and comfort, without causing the slightest derangement to the domestic economy. Sold by the gallon, cwt., or ton, by every respectable oilman in the kingdom, and at the depot, 1 Bream's-buildings, Chancery-lane, where may be seen, and copies had of, the original certificate of Dr. Serny, a senior member of the College of Chemistry. Sold also in sample bottles, 1s. and 2s. each, bottles included.

THE PATENT ALKALI COMPANY'S METALLIC BLACK and PURPLE-BROWN PAINTS are applicable to every kind of iron and woodwork, farm, and other out-buildings, shipping, &c., &c., and are pre-eminently superior to all the ordinary descriptions of white or red lead, or *so-called* "Mineral Paints," in point of economy, durability, and preserving quality. Prices—Black, 25l. per ton; Rich Purple-Brown, 28l. Delivered in London or Liverpool, exclusive of packages, which are not returnable, except to be refilled, free of expense to the company. Agents:—Messrs. Evans, Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Mr. S. J. Pill, Yarmouth; Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Vint and Co., Newcastle-on-Tyne, and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregedna, near Falmouth: Messrs. Bryant and May, Tooley-street, London. To be obtained (also with copies of testimonials) on application at the offices of the company, 20, Fenchurch-street, London. JOHN A. WEST, Secretary.

ZINC, from the VIEILLE MONTAGNE MINING COMPANY, is the purest known, free from alloy of iron, lead, or sulphur. It is supplied in spelter for brass founders, &c., and in sheets for ship sheathing and roofings of all kinds, and nails of all dimensions. It may be had at the following Agents', who have always a large stock in hand:—

London—Messrs. Charles Devaux and Co.; Mr. Charles Jack; Mr. William Skirrow.
Birmingham—Mr. John Barwell.
Liverpool—Messrs. E. Zwelchenbart and Co.
Manchester—Messrs. Richard Johnson and Brother.
Leeds—Messrs. J. G. and T. Heaps.
Hull—Messrs. J. Parker and Sons.
Newcastle-upon-Tyne—Mr. Benjamin Plummer.
Leith—Messrs. Robert Anderson and Co.
Glasgow—Messrs. A. G. Kidston and Co.
Bristol—Messrs. Morgan McArthur and Co.
Plymouth—Messrs. Luscombe, Driscoll, and Co.
Southampton—Mr. W. J. Lefeuvre.
Yarmouth—Messrs. John Shelley and Co.

Zinc from 20 to 24 oz. per square foot is generally used for roofings, which come at least one-third cheaper than slate coverings; and the ship sheathing, which lasts from five to six years, comes two-thirds cheaper than copper or yellow metal. And if the zinc coverings are made of the Vieille Montagne Zinc, and under the superintendence of Mr. Gepelin, the surveyor of the Company (for which no charge whatever is made), a guarantee of ten years will be given of its durability.—For further particulars and prices, apply to Mr. H. F. SCHMOLL, General Agent for England, at the Company's Offices, No. 12, Manchester-buildings, Westminster-bridge, London.